lenovo

Lenovo H50 SeriesHardware Maintenance Manual

Machine Types: 90C1 [H50-00]; 90BH [H50-05]; 90B6 [H50-50 ES]; 90B7 [H50-50 Non-ES]; 90BF [H50-55 ES]; 90BG [H50-55 Non-ES]

Lenovo H50 Series
Hardware Maintenance Manual

Machine Types: 90C1 [H50-00]; 90BH [H50-05]; 90B6 [H50-50 ES];
90B7 [H50-50 Non-ES]; 90BF [H50-55 ES]; 90BG [H50-55 Non-ES]

Contents

Chapter 1. About this manual

This manual contains service and reference information for Lenovo H50 series desktop computers listed on the cover. It is intended only for trained servicers who are familiar with Lenovo computer products.

Before servicing a Lenovo product, be sure to read the Safety Information.

The description of the TV card in this manual is only used for the machines which have the TV card. It is invalid for those machines which do not have TV card.

Important Safety Information

Be sure to read all caution and danger statements in this book before performing any of the instructions.

Veuillez lire toutes les consignes de type DANGER et ATTENTION du présent document avant d'exécuter les instructions.

Lesen Sie unbedingt alle Hinweise vom Typ "ACHTUNG" oder "VORSICHT" in dieser Dokumentation, bevor Sie irgendwelche Vorgänge durchführen

Leggere le istruzioni introdotte da ATTENZIONE e PERICOLO presenti nel manuale prima di eseguire una qualsiasi delle istruzioni

Certifique-se de ler todas as instruções de cuidado e perigo neste manual antes de executar qualquer uma das instruções

Es importante que lea todas las declaraciones de precaución y de peligro de este manual antes de seguir las instrucciones.

执行任何说明之前，请确保已阅读本书中的所有警告和危险声明。

執行任何指示前，請確實閱讀本書中的所有警告及危險聲明。

Chapter 2. Safety information

This chapter contains the safety information that you need to be familiar with before servicing a computer.

General safety

Follow these rules to ensure general safety:

- Observe good housekeeping in the area of the machines during and after maintenance.
- When lifting any heavy object:
    1. Ensure you can stand safely without slipping.
    2. Distribute the weight of the object equally between your feet.
    3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
    4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back.
       Do not attempt to lift any objects that weigh more than 16 kg (35 lb) or objects that you think are too heavy for you.
- Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.
- Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.
- Keep your tool case away from walk areas so that other people will not trip over it.
- Do not wear loose clothing that can be trapped in the moving parts of a machine. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 centimeters (3 inches) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.
  Remember: Metal objects are good electrical conductors.
- Wear safety glasses when you are: hammering, drilling soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall all covers correctly before returning the machine to the customer.

Electrical safety

CAUTION:
Electrical current from power, telephone, and communication cables can be hazardous. To avoid personal injury or equipment damage, disconnect the attached power cords, telecommunication systems, networks, and modems before you open the computer covers, unless instructed otherwise in the installation and configuration procedures.

Observe the following rules when working on electrical equipment.

Important: Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents. Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from electrical shock.

- Find the room emergency power-off (EPO) switch, disconnecting switch, or electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Disconnect all power before:
  - Performing a mechanical inspection
  - Working near power supplies
  - Removing or installing Field Replaceable Units (FRUs)
- Before you start to work on the machine, unplug the power cord. If you cannot unplug it, ask the customer to power-off the wall box that supplies power to the machine and to lock the wall box in the off position.
- If you need to work on a machine that has exposed electrical circuits, observe the following precautions:
  - Ensure that another person, familiar with the power-off controls, is near you.
    Remember: Another person must be there to switch off the power, if necessary.
  - Use only one hand when working with powered-on electrical equipment; keep the other hand in your pocket or behind your back.
    Remember: There must be a complete circuit to cause electrical shock. By observing the above rule, you may prevent a current from passing through your body.
  - When using a tester, set the controls correctly and use the approved probe leads and accessories for that tester.
  - Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from grounds such as metal floor strips and machine frames.

  Observe the special safety precautions when you work with very high voltages; these instructions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.
- Regularly inspect and maintain your electrical hand tools for safe operational condition.
- Do not use worn or broken tools and testers.
- *Never assume* that power has been disconnected from a circuit. First, *check* that it has been powered-off.
- Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, nongrounded power extension cables, power surges, and missing safety grounds.
- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive; such touching can cause personal injury and machine damage.
- Do not service the following parts with the power on when they are removed from their normal operating places in a machine:
  - Power supply units
  - Pumps
  - Blowers and fans
  - Motor generators

  and similar units. (This practice ensures correct grounding of the units.)
- If an electrical accident occurs:
  - Use caution; do not become a victim yourself.
  - Switch off power.

– Send another person to get medical aid.

Safety inspection guide

The intent of this inspection guide is to assist you in identifying potentially unsafe conditions on these products. Each machine, as it was designed and built, had required safety items installed to protect users and service personnel from injury. This guide addresses only those items. However, good judgment should be used to identify potential safety hazards due to attachment of features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock).
- Explosive hazards, such as a damaged CRT face or bulging capacitor
- Mechanical hazards, such as loose or missing hardware

The guide consists of a series of steps presented in a checklist. Begin the checks with the power off, and the power cord disconnected.

Checklist:

1. Check exterior covers for damage (loose, broken, or sharp edges).
2. Power-off the computer. Disconnect the power cord.
3. Check the power cord for:
   a. A third-wire ground connector in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and frame ground.
   b. The power cord should be the appropriate type as specified in the parts listings.
   c. Insulation must not be frayed or worn.
4. Remove the cover.
5. Check for any obvious alterations. Use good judgment as to the safety of any alterations.
6. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
7. Check for worn, frayed, or pinched cables.
8. Check that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

Handling electrostatic discharge-sensitive devices

Any computer part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge so that the machine, the part, the work mat, and the person handling the part are all at the same charge.

Notes:

1. Use product-specific ESD procedures when they exceed the requirements noted here.
2. Make sure that the ESD protective devices you use have been certified (ISO 9000) as fully effective.

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.

- Avoid contact with other people while handling the part.
- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
- Select a grounding system, such as those listed below, to provide protection that meets the specific service requirement.

    Note: The use of a grounding system is desirable but not required to protect against ESD damage.

    – Attach the ESD ground clip to any frame ground, ground braid, or green-wire ground.
    – Use an ESD common ground or reference point when working on a double-insulated or battery-operated system. You can use coax or connector-outside shells on these systems.
    – Use the round ground-prong of the ac plug on ac-operated computers.

Grounding requirements

Electrical grounding of the computer is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

Safety notices

The caution and danger safety notices in this section are provided in the language of English.

DANGER

Electrical current from power, telephone and communication cables is hazardous.

To avoid a shock hazard:

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.**

To Connect	To Disconnect
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlet.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

CAUTION:
When replacing the lithium battery, use only Part Number 45C1566 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.
Do not:

• **Throw or immerse into water**

• **Heat to more than 100°C (212°F)**

• **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

CAUTION:
When laser products (such as CD-ROMs, DVD-ROM drives, fiber optic devices, or transmitters) are installed, note the following:

• **Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.**

• **Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.**

DANGER

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following:

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

≥18 kg(37 lbs)	≥32 kg(70.5 lbs)	≥55 kg(121.2 lbs)

CAUTION:
Use safe practices when lifting.

CAUTION:
The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.
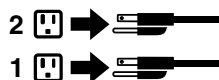
CAUTION:
Do not place any object weighing more than 82 kg (180 lbs.) on top of rack-mounted devices.

Chapter 3. General information

This chapter provides general information that applies to all machine types supported by this publication.

Specifications

This section lists the physical specifications for your computer.

This section lists the physical specifications for your computer.

Type Lenovo H50 series

This section lists the physical specifications.

Environment

Air temperature:

Operating: 10° to 35°C

Transit: -20° to 55°C

Humidity:

Operating: 35% to 80%

Transit: 20% to 90% (40°C)

Altitude: 86KPa to 106KPa

Electrical input:

Input voltage: 90V-264V(AC)

Input frequency: 47Hz-63Hz

Chapter 4. General Checkout

Attention: The drives in the computer you are servicing might have been rearranged or the drive startup sequence changed. Be extremely careful during write operations such as copying, saving, or formatting. Data or programs can be overwritten if you select an incorrect drive.

General error messages appear if a problem or conflict is found by an application program, the operating system, or both. For an explanation of these messages, refer to the information supplied with that software package.

Use the following procedure to help determine the cause of the problem:

1. Power-off the computer and all external devices.
2. Check all cables and power cords.
3. Set all display controls to the middle position.
4. Power-on all external devices.
5. Power-on the computer.
   - Look for displayed error codes
   - Look for readable instructions or a main menu on the display.

   If you did not receive the correct response, proceed to step 6.

   If you do receive the correct response, proceed to step 7.
6. Look at the following conditions and follow the instructions:
   - If the computer displays a POST error, go to "POST error codes".
   - If the computer hangs and no error is displayed, continue at step 7.
7. If the test stops and you cannot continue, replace the last device tested.

Chapter 5. Using the Setup Utility

The Setup Utility program is used to view and change the configuration settings of your computer, regardless of which operating system you are using. However, the operating-system settings might override any similar settings in the Setup Utility program.

Starting the Lenovo BIOS Setup Utility program

To start the Lenovo BIOS Setup Utility program, do the following:

1. If your computer is already on when you start this procedure, shut down the operating system and turn off the computer.
2. Press and hold the **F1** key then turn on the computer. When the Lenovo BIOS Setup Utility program is displayed, release the **F1** key.

Note: If a Power-On Password or an Administrator Password has been set, the Setup Utility program menu is not displayed until you type your password. For more information, see "Using passwords."

Viewing and changing settings

System configuration options are listed in the Lenovo BIOS Setup Utility program menu. To view or change settings, see "Starting the Setup Utility program."

You must use the keyboard when using the Lenovo BIOS Setup Utility menu. The keys used to perform various tasks are displayed on the bottom of each screen.

Using passwords

You can use the Lenovo BIOS Setup Utility program to set passwords to prevent unauthorized persons from gaining access to your computer and data. See "Starting the Setup Utility program." The following types of passwords are available:

• Administrator Password
• Power-On Password

You do not have to set any passwords to use your computer. However, if you decide to set passwords, read the following sections.

Password considerations

A password can be any combination of letters and numbers up to 16 character (a-z, and 0-9). For security reasons, it is a good idea to use a strong password that cannot be easily compromised. We suggest that passwords should follow these rules:

• Strong passwords contain 7-16 characters, combine letters and numbers.
• Do not use your name or your user name.
• Do not use a common word or a common name.
• Be significantly different from your previous password.

Attention: Administrator and Power-On passwords are not case sensitive

Administrator Password

Setting an Administrator Password deters unauthorized persons from changing configuration settings. You might want to set an Administrator Password if you are responsible for maintaining the settings of several computers.

After you set an Administrator Password, a password prompt is displayed every time you access the Lenovo BIOS Setup Utility program.

If both the Administrator and Power-On Password are set, you can type either password. However, you must use your Administrator Password to change any configuration settings.

Setting, changing, or deleting an Administrator password

To set an Administrator Password, do the following:

Note: A password can be any combination of letters and numbers up to 16 character (a-z, and 0-9). For more information, see "Password considerations" on page 13.

1. Start the Lenovo BIOS Setup Utility program (see "Starting the Lenovo BIOS Setup Utility program" on page 13).
2. From the **Security** menu, select **Set Administrator Password** and press the **Enter** key.
3. The password dialog box will be displayed. Type the password then press the **Enter** key.
4. Re-type the password to confirm, then press the **Enter** key. If you type the password correctly, the password will be installed.

To change an Administrator Password, do the following:
1. Start the Lenovo BIOS Setup Utility program (see "Starting the Lenovo BIOS Setup Utility program" on page 13).
2. From the **Security** menu, select **Set Administrator Password** and press the **Enter** key.
3. The password dialog box will be displayed. Type the current password then press **Enter** key.
4. Type the new password, then press **Enter** key. Re-type the password to confirm the new password, if you type the new password correctly, the new password will be installed. A Setup Notice will display that changes have been saved.

To delete a previously set Administrator Password, do the following :
1. From the **Security** menu, select **Set Administrator Password** and press the **Enter** key.
2. The password dialog box will be displayed. Type the current password and press the **Enter** key.
3. To delete an **Administrator Password**, **Enter** blank fields for each new password line item. A setup notice will display that changes have been saved.
4. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
5. Select **Save changes and Exit** from the menu.

Power-On Password

When a Power-On Password is set, you cannot start the Lenovo BIOS Setup Utility program until a valid password is typed from the keyboard.

Setting, changing, or deleting a Power-On Password

Note: A password can be any combination of letters and numbers up to 16 character (a-z, and 0-9).

To set a Power-On Password, do the following:

1. Start the Lenovo BIOS Setup Utility program (See "Starting the Lenovo BIOS Setup Utility program" on page 13.)
2. From the **Security** menu, select **Set Power-On Password** and press the **Enter** key.
3. The password dialog box will be displayed. Type the password, and press the **Enter** key.
4. Re-type the password to confirm, if you type the password correctly, the password will be installed.

To change a Power-On Password, do the following:

1. Start the Lenovo BIOS Setup Utility program (See "Starting the Lenovo BIOS Setup Utility program" on page 13.)
2. From the **Security** menu, select **Set Power-On Password** and press the **Enter** key.
3. The password dialog box will be displayed. Type the current password then press the **Enter** key.
4. Type the new password, then press the **Enter** key. Re-type the password to confirm the new password, if you type the new password correctly, the new password will be installed. A setup notice will display that changes have been saved.

To delete a previously set Power-On Password, do the following :

1. From the **Security** menu, select **Set Power-On Password** and press the **Enter** key.
2. The password dialog box will be displayed. Type the current password and press the **Enter** key.
3. To delete the **Power-On Password**, **Enter** blank fields for each new password line item. A setup notice will display that changes have been saved.
4. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
5. Select **Save changes and Exit** from the menu.

Enabling or disabling a device

The **Devices** options is used to enable or disable user access to the following devices:	
Serial Port Setup	Select this option to enable or disable **Serial Port** (com).
USB Functions	Select whether to enable or disable **USB** (Universal Serial Bus) functions. If it is disabled, the **USB** keyboard and/or **USB** mouse may be not able to be used without device driver support.
ATA Drive Setup	Select IDE, ACHI mode or disable SATA controller. Device driver support is required for ACHI mode. Depending on how the hard disk image was installed, changing this setting may prevent the system from booting.
Video Setup	To configure video related functions. This option allows you to configure system's initiate graphic adapter from either IGD (Integrated Graphics Device) or PEG (PCI Express Graphics). Keep on the IGD enabled based on the setup options.

Onboard Audio Controller	Select whether to enable or disable the **Onboard Audio Controller**, when feature is set to Disabled all devices connected to the audio connectors (e.g. a headphone or a microphone) are disabled and can't be used.
Onboard Ethernet Controller or LAN Boot Agent	Select whether to enable or disable **Onboard Ethernet Controller**, or select whether to enable or disable load onboard **PXE** (**Preboot Execution Environment**), or **SMC** (**Secure Managed Client**). This feature will allow the computer to boot from a server image.

To enable or disable a device, do the following:

1. Start the Setup Utility program (see "Starting the Setup Utility program" on page 13).
2. From the Setup Utility program menu, select **Devices**.
3. Select:

    Serial Port Setup press the **Enter** key, and then select **Serial Port Setup**.

    USB Setup press the **Enter** key, and then select **USB Functions**.

    ATA Device Setup press the **Enter** key. Select **Configure SATA as**, press the **Enter** key and then select SATA mode.

    Video Setup press the **Enter** key, and then select **Video Setup**.

    Audio Setup press the **Enter** key, and then select **Onboard Audio Controller**.

    Network Setup press the **Enter** key, then select **Onboard Ethernet Support** or **LAN Boot Agent**.
4. Select **Disabled** or **Enabled** and press the **Enter** key.
5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
6. Select **Save changes and Exit** from the menu.

    Note: If you do not want to save the settings, select **Discard changes and Exit** from the menu.

Selecting a startup device

If your computer does not boot from a device such as the CD/DVD-ROM drive disk or hard disk as expected, follow one of the procedures below.

Selecting a temporary startup device

Use this procedure to startup from any boot device.

Note: Not all CDs, DVDs or hard disk drives are bootable.

1. Turn off your computer.
2. Press and hold the **F12** key then turn on the computer. When the **Startup Device Menu** appears, release the **F12** key.

    Note: If the **Startup Device Menu** does not display using these steps, repeatedly press and release the **F12** key rather than keeping it pressed when turning on the computer.
3. Use ↑ and ↓ arrows to select the desired startup device from the **Startup Device Menu** and press the **Enter** key to begin.

    Note: Selecting a startup device from the **Startup Device Menu** does not permanently change the startup sequence.

Selecting or changing the startup device sequence

To view or permanently change the configured startup device sequence, do the following:

1. Start the Lenovo BIOS Setup Utility program (see "Starting the Lenovo BIOS Setup Utility program" on page 13).
2. From the Lenovo BIOS Setup Utility program main menu, select the **Startup** option.
3. Press the **Enter** key, and select the devices for the **Primary Boot Sequence**. Read the information displayed on the right side of the screen.
4. Use - and ¯ arrows to select a device. Use the **<+>** or **<->** keys to move a device up or down. Use the **<x>** key to exclude the device from or include the device in the boot sequence.
5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
6. Select **Save changes and Exit** from the menu.

    Notes:

    a. If you do not want to save the settings, select **Discard changes and Exit** from the menu.

    b. If you have changed these settings and want to return to the default settings, select **Load Optimal Defaults** from the menu.

Exiting the Lenovo BIOS Setup Utility program

After you finish viewing or changing settings, press the **Esc** key to return to the Lenovo BIOS Setup Utility program main menu. You might have to press the **Esc** key several times. Do one of the following:

- If you want to save the new settings, select **Save changes and Exit** from the menu. When the **Save & reset** window shows, select the **Yes** button, and then press the **Enter** key to exit the Lenovo BIOS Setup Utility program.

- If you do not want to save the settings, select **Discard changes and Exit** from the menu. When the **Reset Without Saving** window shows, select the **Yes** button, and then press the **Enter** key to exit the Setup Utility program.

Chapter 6. Symptom-to-FRU Index

The Symptom-to-FRU index lists error symptoms and possible causes. The most likely cause is listed first. Always begin with Chapter 4, "General Checkout," on page 11. This index can also be used to help you decide which FRUs to have available when servicing a computer. If you are unable to correct the problem using this index, go to "Undetermined problems" on page 20.

Notes:

- If you have both an error message and an incorrect audio response, diagnose the error message first.
- If you cannot run the diagnostic tests or you get a diagnostic error code when running a test but did receive a POST error message, diagnose the POST error message first.
- If you did not receive any error message look for a description of your error symptoms in the first part of this index.

Hard disk drive boot error

A hard disk drive boot error can have the following causes.

Error	FRU/Action
The startup drive is not included in the boot sequence in configuration.	Check the configuration and ensure the startup drive is in the boot sequence.
No operating system installed on the boot drive.	Install an operating system on the boot drive.
The boot sector on the startup drive is corrupted.	The drive must be formatted. Do the following: 1. Attempt to back-up the data on the failing hard disk drive. 2. Use the operating system to format the hard disk drive.
The drive is defective.	Replace the hard disk drive.

Power Supply Problems

Follow these procedures if you suspect there is a power supply problem.

Check/Verify	FRU/Action
Check that the following are properly installed: - Power Cord - On/Off Switch connector - System Board Power Supply connectors - Microprocessor(s) connection	Reseat connectors
Check the power cord.	Power Cord
Check the power-on switch.	Power-on Switch

POST error codes

Each time you turn the computer on, it performs a series of tests to check that the system is operating correctly and that certain options are set. This series of tests is called the *Power-On Self-Test*, or *POST*. POST does the following:

- Checks some basic system-board operations
- Checks that the memory is working correctly
- Starts video operations
- Verifies that the boot drive is working

POST Error Message	Description/Action
Keyboard error	Cannot initialize the keyboard. Make sure the keyboard is properly connected to the computer and that no keys are held pressed during POST. To purposely configure the computer without a keyboard, select **Keyboardless operation** in **Startup** option to **Enabled**. The BIOS then ignores the missing keyboard during POST.
Reboot and Select proper Boot device or Insert Boot Media in selected Boot device	The BIOS was unable to find a suitable boot device. Make sure the boot drive is properly connected to the computer. Make sure you have bootable media in the boot device.

Undetermined problems

1. Power-off the computer.
2. Remove or disconnect the following components (if connected or installed) one at a time.
   a. External devices (modem, printer, or mouse)
   b. Extended video memory
   c. External Cache
   d. External Cache RAM
   e. Hard disk drive
   f. Disk drive
3. Power-on the computer to re-test the system.
4. Repeat steps 1 through 3 until you find the failing device or component.

If all devices and components have been removed and the problem continues, replace the system board.

Chapter 7. Locating connectors, controls and components

This section provides illustrations to help locate the various connectors, controls and components of the computer.

Font view

The following illustration shows the location of controls and components on the front of the computer.

Attention: Be careful not to block any air vents on the computer. Blocked air vents can cause overheating.
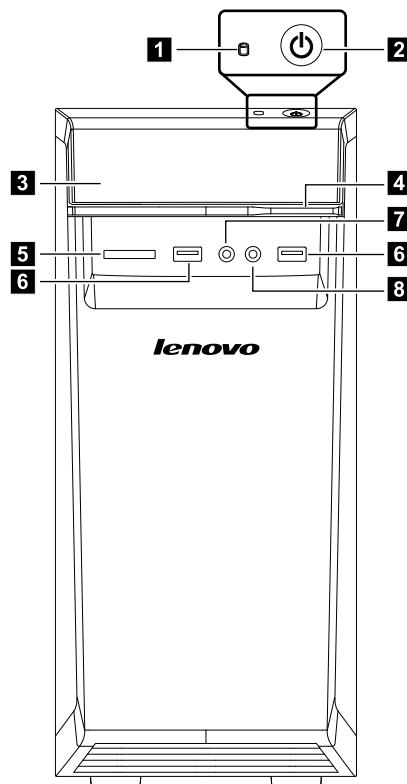
1. Hard disk drive indicator	5. Memory card reader (selected models only)
2. Power button	6. USB 2.0 connectors (2)
3. Optical Drive (selected models only)	7. Headphone connector
4. Optical drive eject button	8. Microphone connector

Attention: The effective range of the Built-in IR Emitter is 10 feet (3m).

Rear view

The following illustration shows the location of connectors and components on the rear of the computer.

H50-00
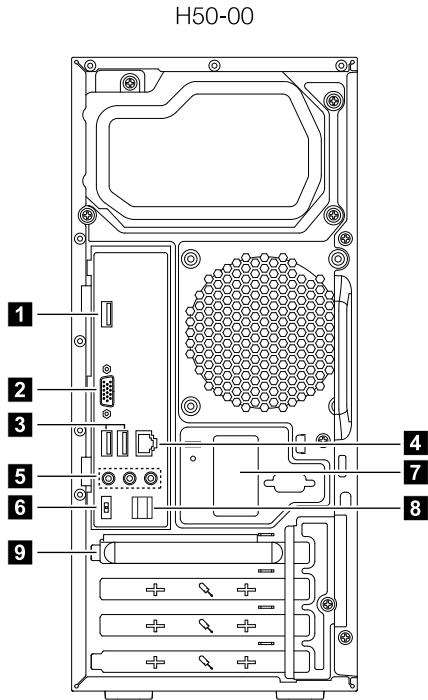
1. USB 3.0 connector	6. Power connector
2. On-board VGA connector	7. Wi-Fi antenna (selected models only)
3. USB 2.0 connectors (2)	8. Cable clip
4. Ethernet connector	9. Expansion card slot
5. Audio connectors	

H50-05
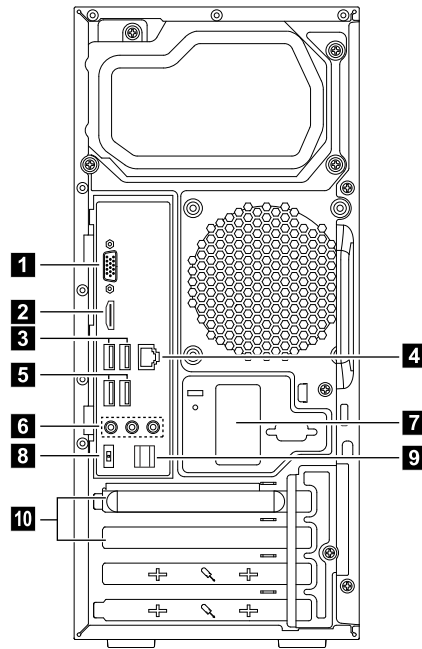
1. On-board VGA connector	6. Audio connectors
2. HDMI connector (selected models only)	7. Wi-Fi antenna (selected models only)
3. USB 2.0 connectors (2)	8. Power connector
4. Ethernet connector	9. Cable clip
5. USB 3.0 connectors (2)	10. Expansion card slots (some models are equipped with graphics card, USB 3.0 or TV tuner card)

H50-50

1. Power connector	6. USB 2.0 connectors (2)
2. Voltage selection switch (selected models only)	7. Ethernet connector
3. HDMI connector (selected models only)	8. Audio connectors
4. On-board VGA connector	9. Wi-Fi antenna (selected models only)
5. USB 3.0 connectors (2)	10. Expansion card slots (some models are equipped with graphics card, USB 3.0 or TV tuner card)

H50-55

1. Power connector	6. USB 2.0 connectors (2)
2. Voltage selection switch (selected models only)	7. Ethernet connector
3. HDMI connector (selected models only)	8. Audio connectors
4. On-board VGA connector	9. Wi-Fi antenna (selected models only)
5. USB 3.0 connectors (2)	10. Expansion card slots (some models are equipped with graphics card, USB 3.0 or TV tuner card)

Hardware components

The following illustration shows the components that make up your computer.
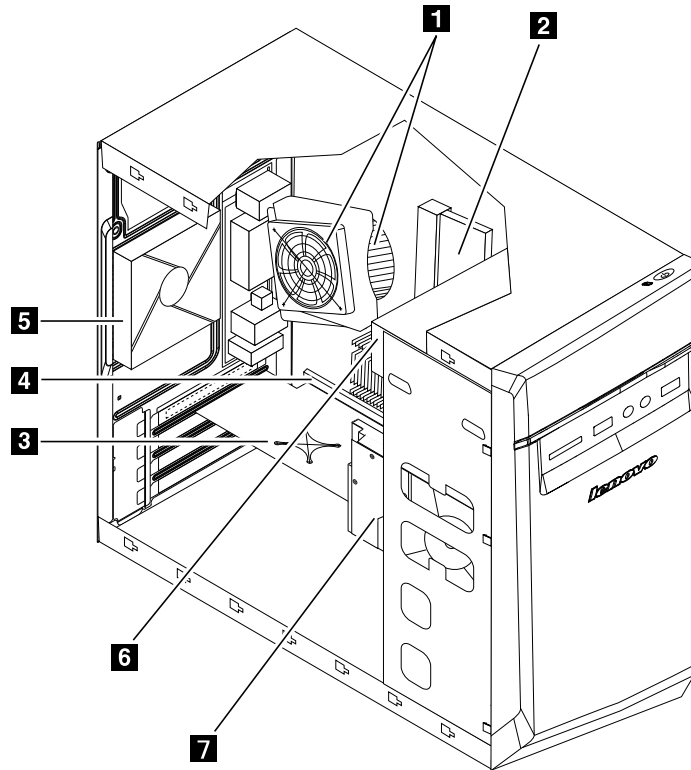
1. Microprocessor fan and heatsink	5. System fan
2. Memory modules	6. Optical drive
3. PCI express adapter card	7. Hard disk drive
4. PCI express adapter connectors	

Identifying parts on the motherboard

The motherboard (sometimes called the planar or system board) is the main circuit board in your computer. It provides basic computing functions and supports a variety of devices that are factory-installed or that you can install later. The following illustration shows the location of connectors and components on the front of the motherboard.

Lenovo H50-00
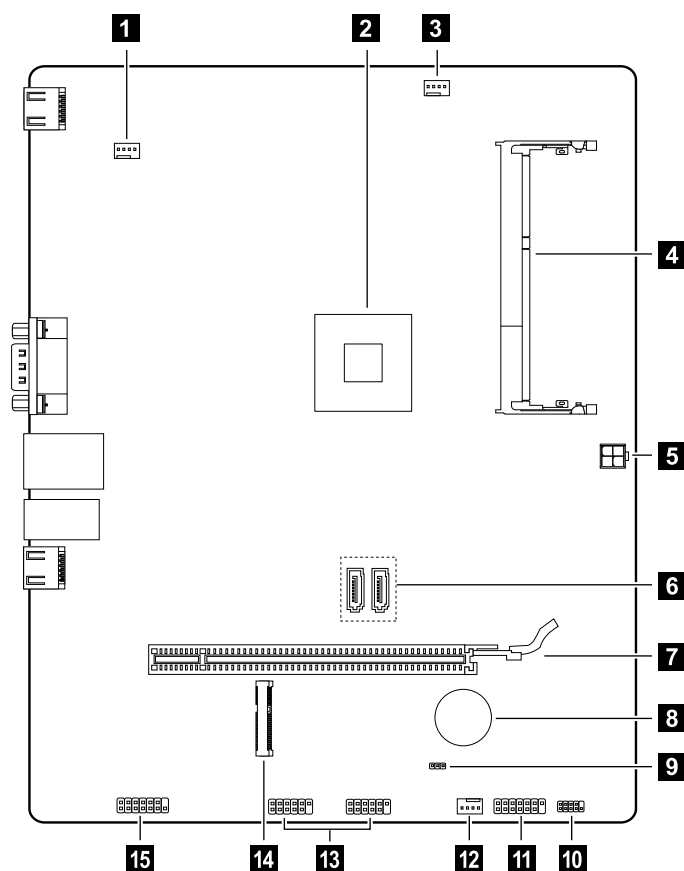
1. System fan header	9. Clear CMOS jumper
2. Microprocessor and heat sink	10. LPC debug header
3. Microprocessor fan header	11. Front panel connector
4. Memory connector	12. Power fan header
5. Hard disk and optical disk drive power connector	13. Front USB connectors (2)
6. SATA connectors (2)	14. Mini PCI-E slot
7. PCI express X 16 adapter slot	15. Front audio connector
8. Battery	

Lenovo H50-05
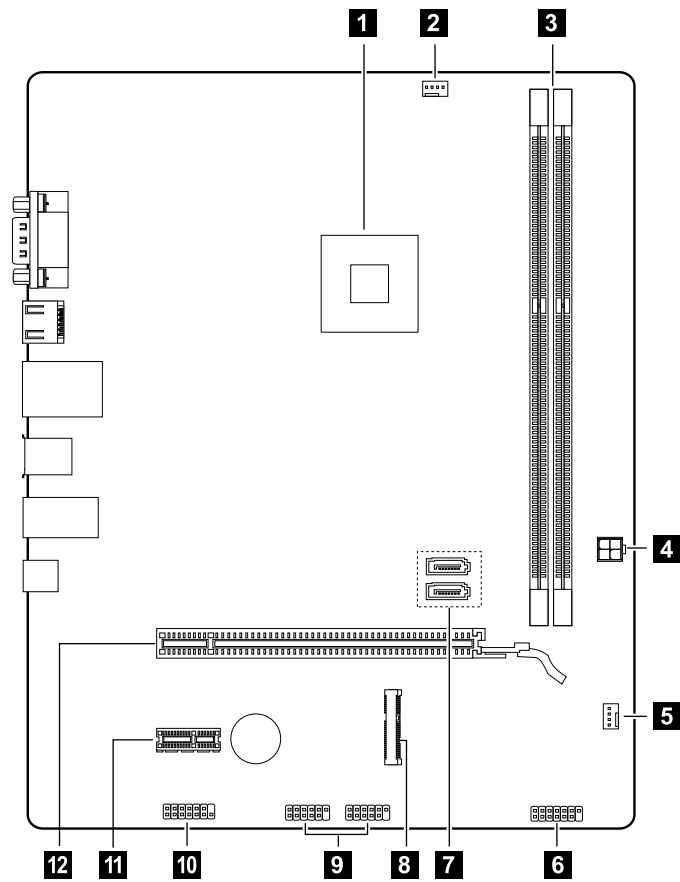
1. Microprocessor and heat sink	7. SATA connectors (2)
2. Microprocessor fan header	8. Mini PCI-E slot
3. Memory slots (2)	9. Front USB connectors (2)
4. Hard disk drive power connector	10. Front audio connector
5. Clear CMOS jumper	11. PCI express X 1 adapter slot
6. Front panel connector	12. PCI express X 16 adapter slot

Lenovo H50-50
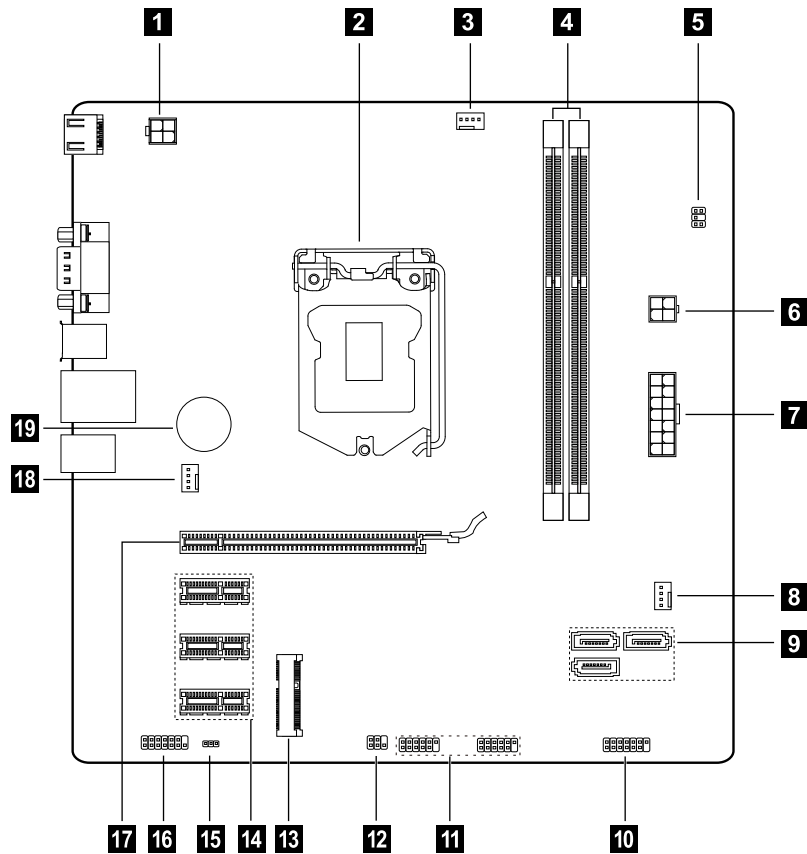
1. 12V power connector	11. Front USB connectors (2)
2. Microprocessor and heat sink	12. LPC debug header
3. Microprocessor fan header	13. Mini PCI-E slot
4. Memory slots (2)	14. PCI express X 1 adapter slots (3)
5. Thermal sensor header	15. Clear CMOS jumper
6. Hard disk drive power connector	16. Front audio connector
7. Power connector	17. PCI express X 16 adapter slot
8. Power fan header	18. System fan header
9. SATA connectors (3)	19. Battery
10. Front panel connector	

Lenovo H50-55
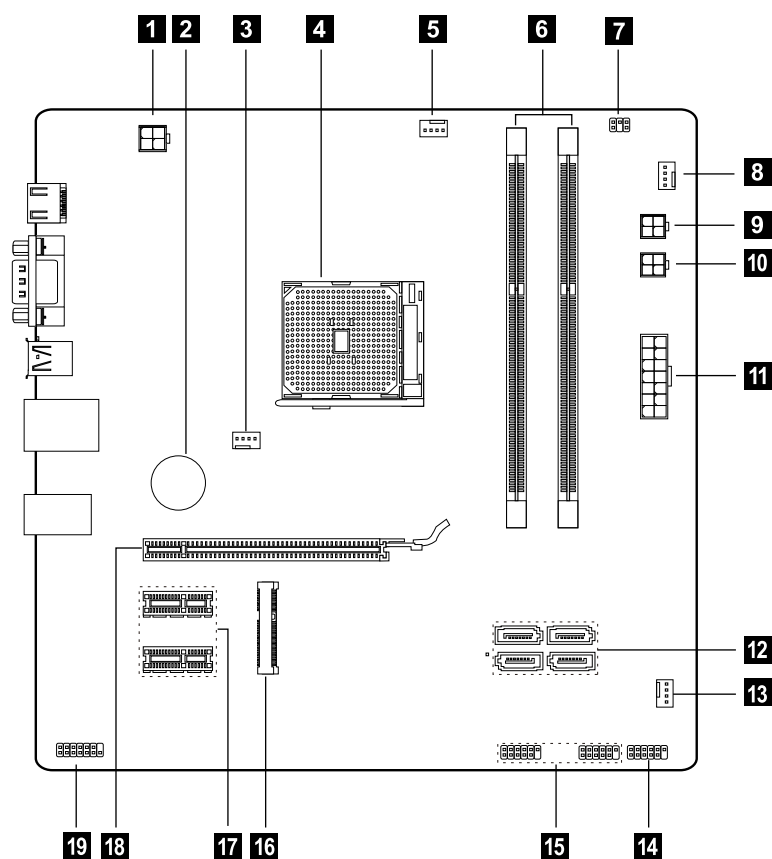
1. 12V power connector	11. Power connector
2. Battery	12. SATA connectors (4)
3. System fan header	13. Power fan header
4. Microprocessor and heatsink	14. Front panel connector
5. Microprocessor fan header	15. Front USB connectors (2)
6. Memory slots (2)	16. Mini PCI-E slot
7. Thermal sensor header	17. PCI express X 1 adapter slot (2)
8. Hard disk drive fan header	18. PCI express X 16 adapter slot
9. Hard disk drive power connector	19. Front audio connector
10. Optical disk drive power connector	

Chapter 8. Replacing hardware

Attention: Do not remove the computer cover or attempt any repair before reading the "Important safety information" in the Safety and Warranty Guide that was included with your computer. To obtain copies of the Safety and Warranty Guide, go to the Support Web site at: http://consumersupport.lenovo.com.

Note: Use only parts provided by Lenovo.

General information

Pre-disassembly instructions

Before proceeding with the disassembly procedure, make sure that you do the following:
1. Turn off the power to the system and all peripherals.
2. Unplug all power and signal cables from the computer.
3. Place the system on a flat, stable surface.

Replacing the keyboard and mouse

To replace the keyboard and mouse

Step 1. Remove any media (disks, CDs, DVDs or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.
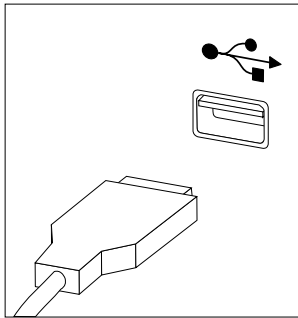
Note: Your keyboard will be connected to a USB connector on one side or at the rear of the computer.

Step 4. Disconnect the defective keyboard cable from the computer and connect the new keyboard cable to the same connector.

Note: The mouse can be replaced using the same method.

Removing the computer cover

Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To remove the computer cover:

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the 2 screws that secure the computer cover at the rear of the chassis.
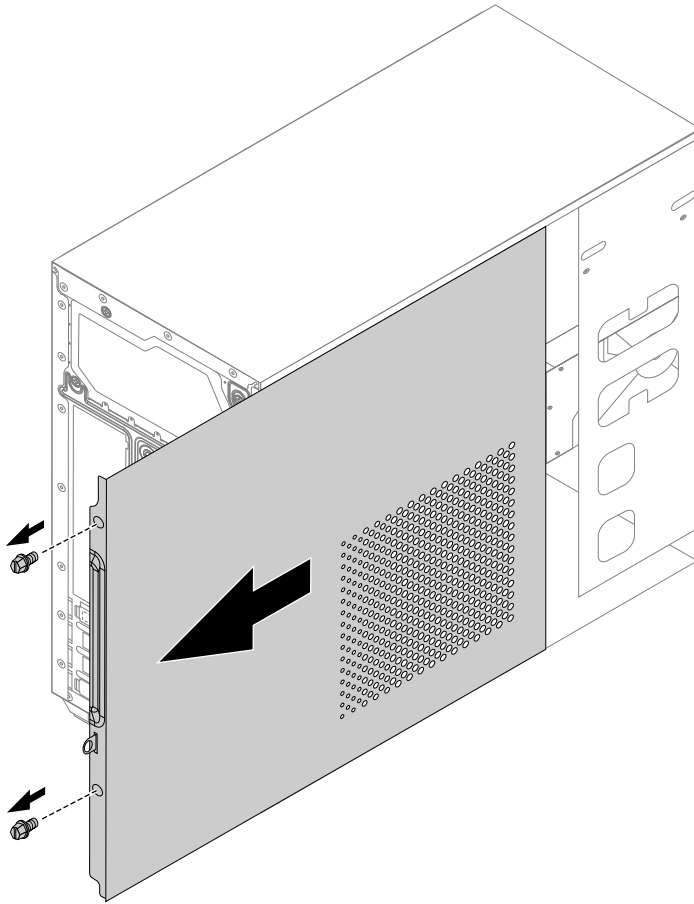
Step 5.   To reinstall the computer cover:

    a.   Line up the computer cover with the chassis then slide it back.

    b.   Secure the computer cover to the chassis with the screws.

Removing the front bezel

Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To remove the front bezel:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Remove the front bezel by releasing the three plastic tabs inside the chassis and pushing the bezel outward as shown.
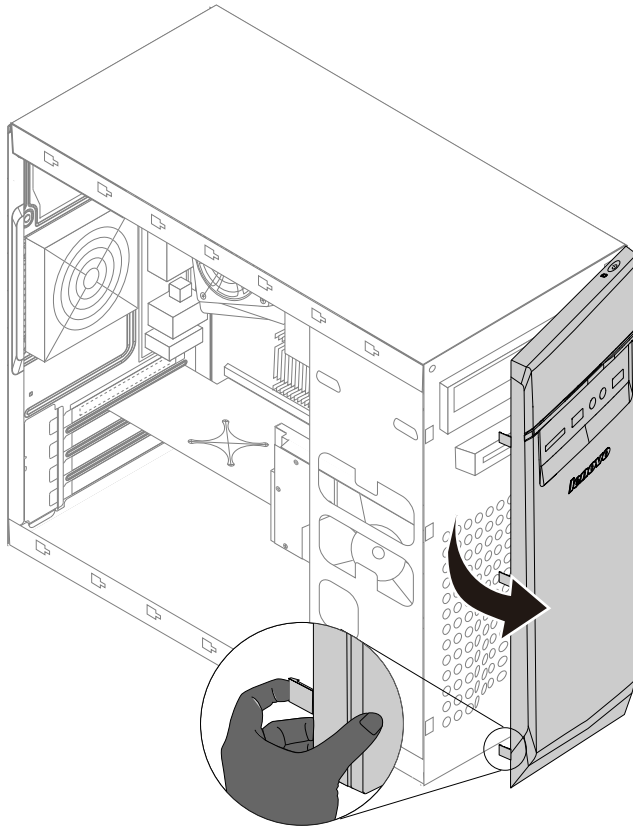
Step 6.   To reattach the bezel:

   a.   Align the plastic tabs on the bottom of the bezel with the corresponding holes in the chassis, and then snap it into position at the bottom and top of the chassis.

Step 7.   Reattach the computer cover.

Replacing an optical drive

Note: For this procedure, it helps to lay the computer flat.

To replace an optical drive:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Remove the front bezel. Refer to "Removing the front bezel".

Step 6.   Disconnect the data and power cables from the rear of the optical drive.

Step 7.   Remove the 2 screws that secure the optical disk drive bay to the chassis. **1**

Step 8.   Slide out the optical disk drive bay, then lift it up. **2**
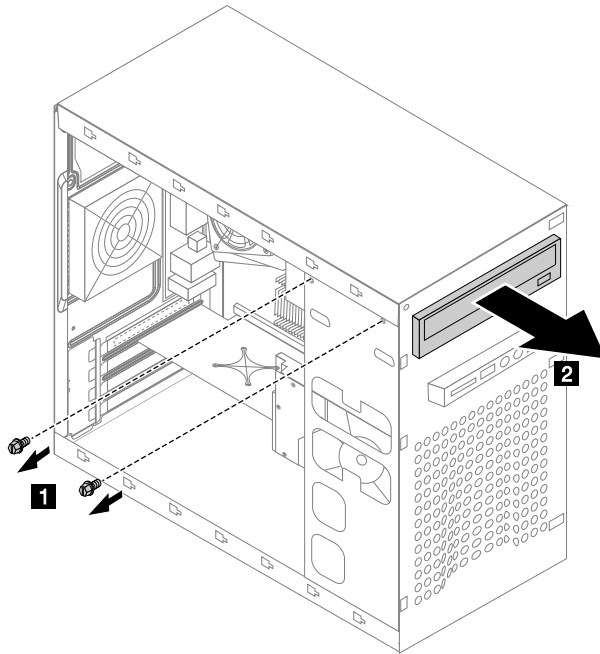
Step 9.   To install the new optical drive:

    a.   Slide the new optical drive into the bay from the back until it snaps into position.

    b.   Secure the optical drive to the bay with the two screws.

    c.   Connect the data and power cables to the drive.

Step 10. Reattach the front bezel, computer cover.

Replacing the hard disk drive

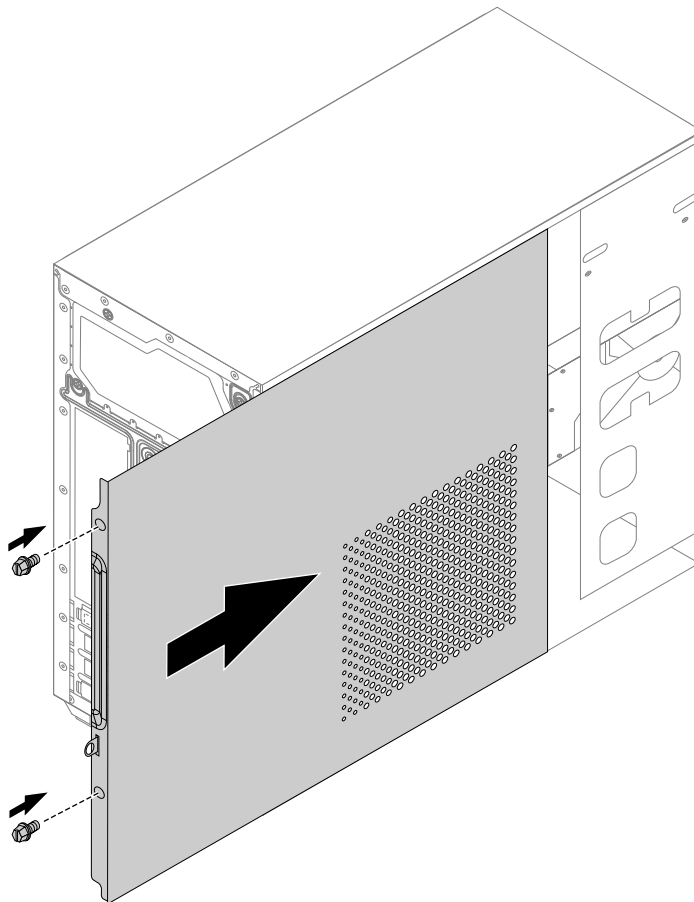**Note:** For this procedure, it helps to lay the computer flat.

To replace the hard disk drive:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Disconnect the data and power cables from the hard disk drive. **1**

Step 6.   Remove the four screws that secure the hard disk drive to drive bay. **2**

Step 7.   Remove the hard disk drive by pulling it straight out of the drive bay. **3**

Step 8.   To install the new hard disk drive：

    a.   Slide the new hard disk drive into the drive bay.

    b.   Secure the new hard disk drive to the drive bay with the four screws.

    c.   Connect the power and data cables to the hard disk drive.

Step 9.   Reattach the computer cover.

Replacing a memory module

Note: For this procedure, it helps to lay the computer flat.

To replace an optical drive:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Locate the memory module connectors. Refer to "Locating components".

Step 6.   **For Lenovo H50–00 refer to the below instructions:**

Step 7. Remove the memory module being replaced by opening the retaining clips as shown.
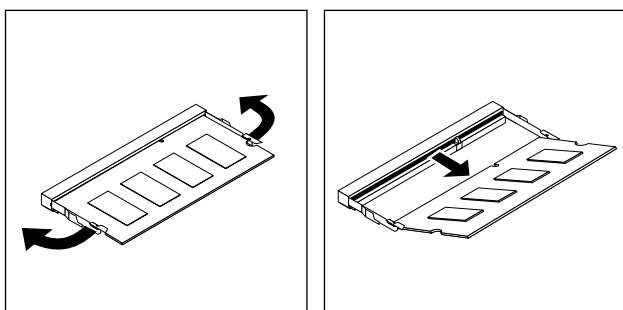
Step 8. Insert the notched end **1** of the new memory module into the slot. Press the memory module firmly and pivot the memory module until it snaps into place. Make sure that the memory module is secured in the slot and does not move easily.
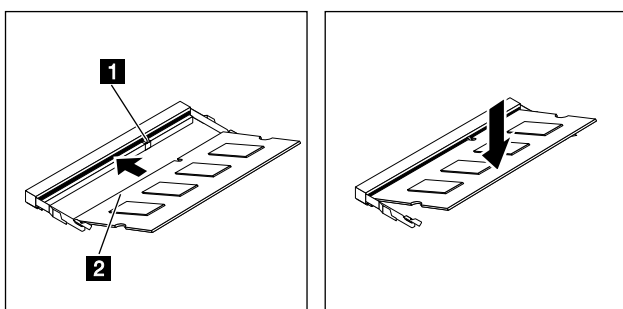
Step 9. **For Lenovo H50–05, H50–50 and H50–55refer to the below instructions:**

Step 10. Remove the memory module being replaced by opening the retaining clips as shown.
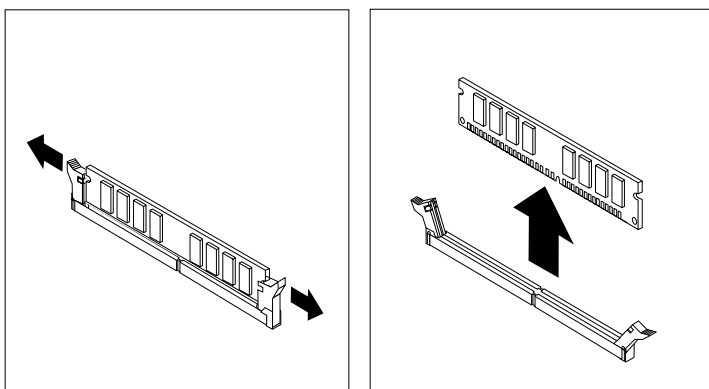
Step 11. Position the new memory module over the memory connector. Make sure the notch **1** on the memory module is correctly aligned with the connector key **2** on the system board. Push the memory module straight down into the connector until the retaining clips close.
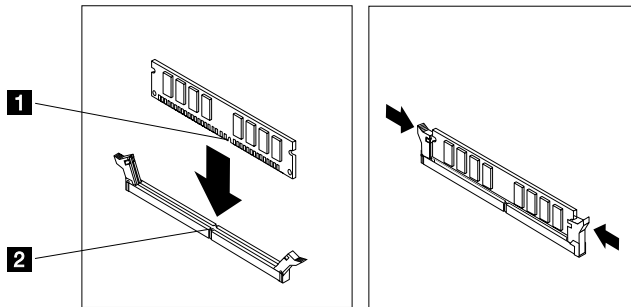
Step 12. Reattach the computer cover.

Replacing the graphic card

To replace the graphic card:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5. Remove the screw that secures the latch to the chassis, **1** open the adapter latch **2** and remove the adapter by pulling it straight out of the adapter connector. **3**
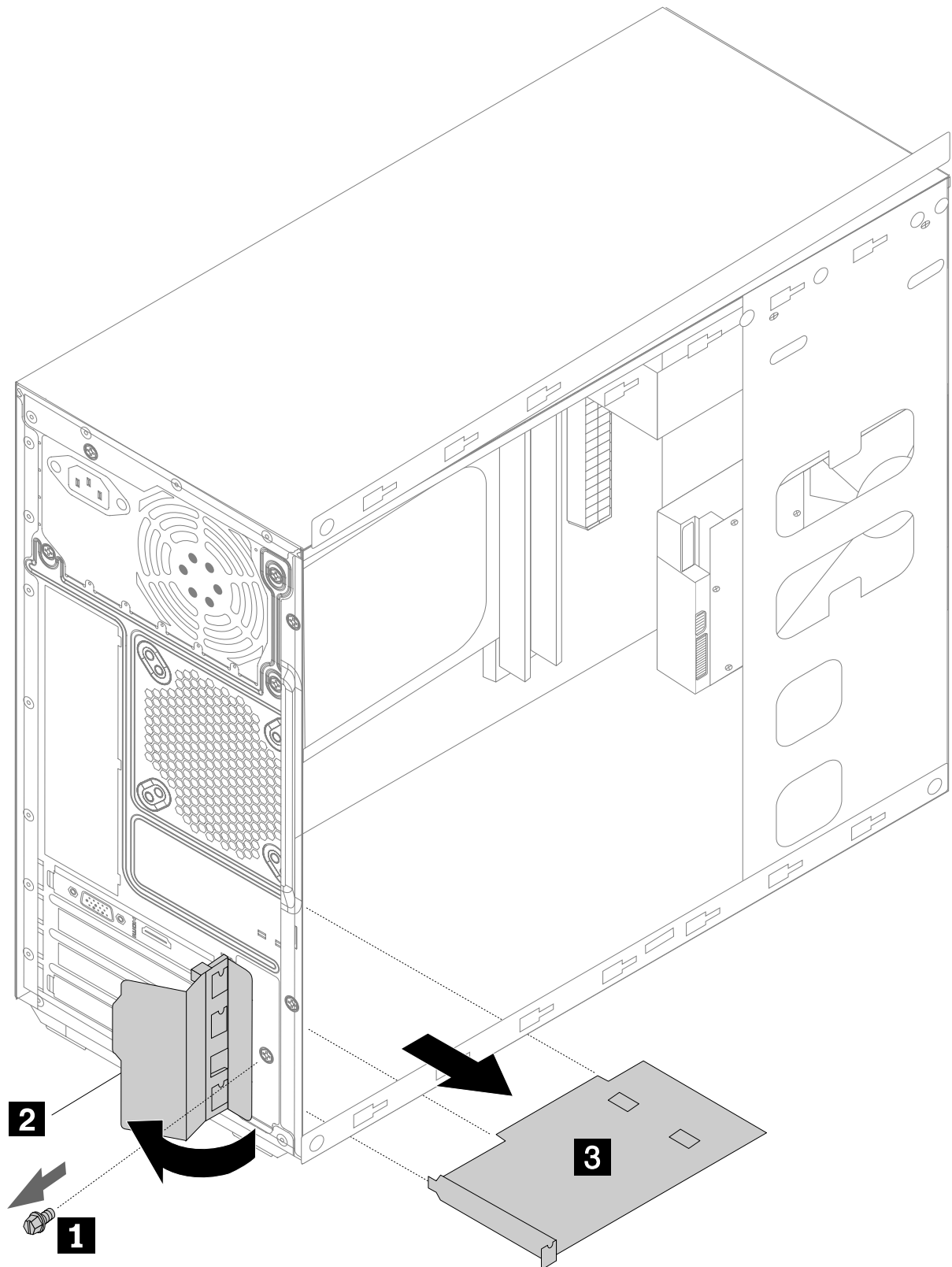
Step 6.   To install the new graphic card:

       a.   Install the new adapter into the same adapter connector.

       b.   Reattach the metal bracket back into position and secure the graphic card to the chassis with the screw.
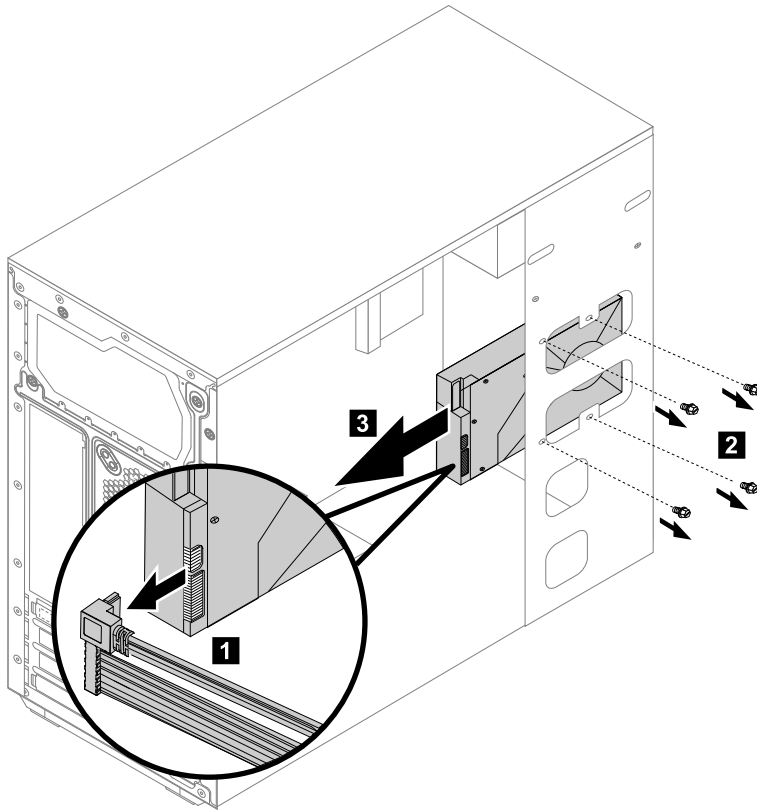
Step 7.   Reattach the computer cover.

Replacing the heat-sink assembly

Note: For this procedure, it helps to lay the computer flat.

To replace the heat-sink:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Disconnect the microprocessor fan cable from the system board.

Step 6.   Remove the 4 screws that secure the heat-sink assembly to the motherboard.
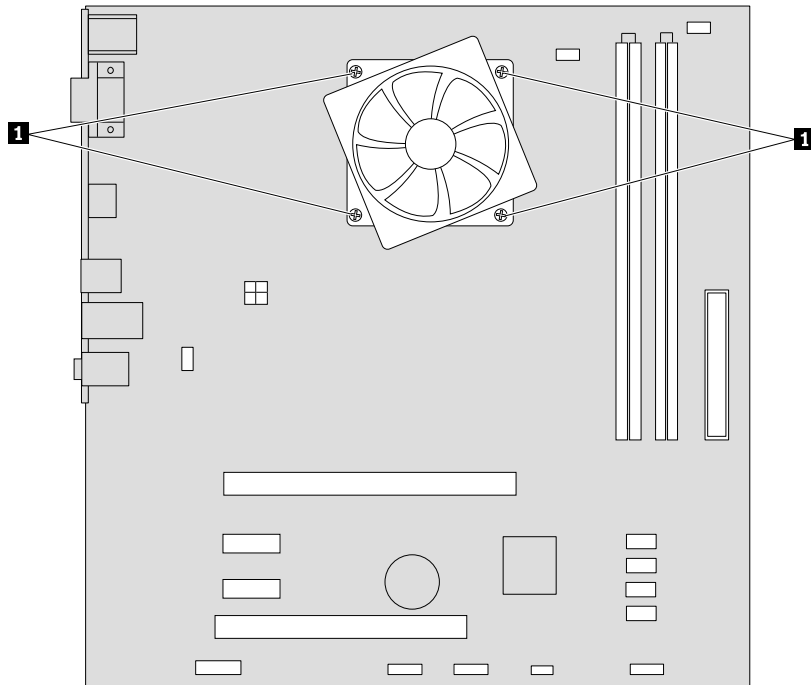
Step 7.   Lift up the heat-sink to remove it.

Step 8.   To install the new heat-sink assembly:

   a.   Use a thermal grease syringe to place five drops of grease on the top of the microprocessor. Each drop of grease should be 0.03ml (3 tick marks on the grease syringe).
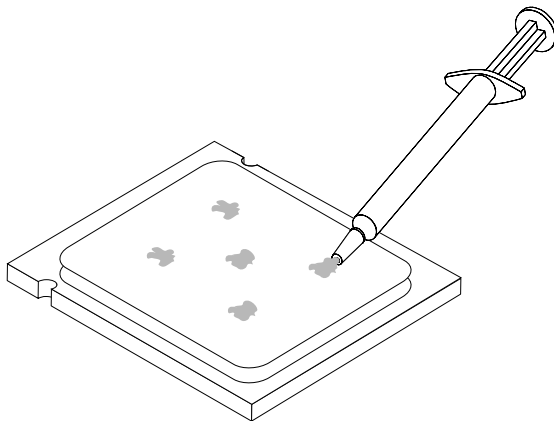
   b.   Line up the screws on the new heat-sink with mounting holes on the motherboard and secure it with the 4 screws.

   c.   Reconnect the microprocessor fan power cable to the connector on the motherboard.

Step 9.   Reattach the computer cover.

Replacing an Intel CPU

Note: For this procedure, it helps to lay the computer flat.

Attention: The following instructions apply only for Lenovo H50–50 model.

To replace the CPU

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating
           system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O)
   cables, and any other cables that are connected to the computer. Refer to "Left and right view"
           and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Replacing the heat-sink assembly. Refer to "Replacing the heat-sink assembly".

Step 6.   To remove the microprocessor **3** from the system board, press then slide the small handle out
           to spring it up. **1** and open the retainer. **2**
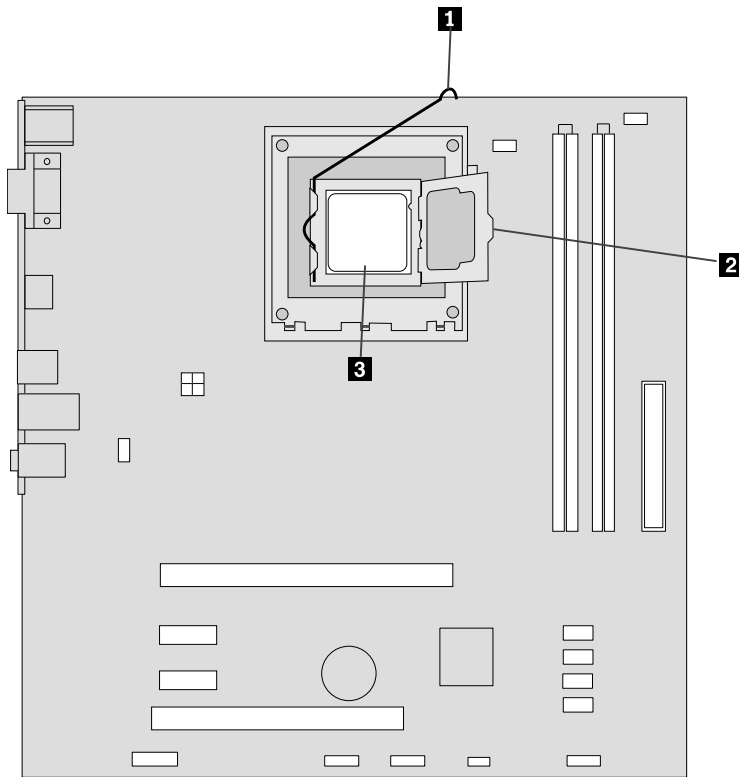
Attention: Do not touch the gold contacts on the bottom of the microprocessor. When handing the
microprocessor, touch only the sides.

Note: Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must
be kept as clean as possible.

Step 7.   Holding the sides of the microprocessor with your fingers, remove the protective cover **1** that protects the gold contacts on the new microprocessor. **2**
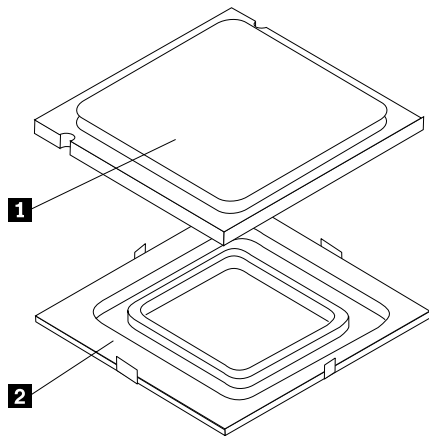
Step 8.   Holding the sides of the microprocessor with your fingers, position the microprocessor so that the notches on the microprocessor are aligned with the tabs in the microprocessor socket.

> **Important:** To avoid damaging the microprocessor contacts, keep the microprocessor completely level while installing it into the socket.

Step 9.   Lower the microprocessor straight down into its socket on the motherboard.
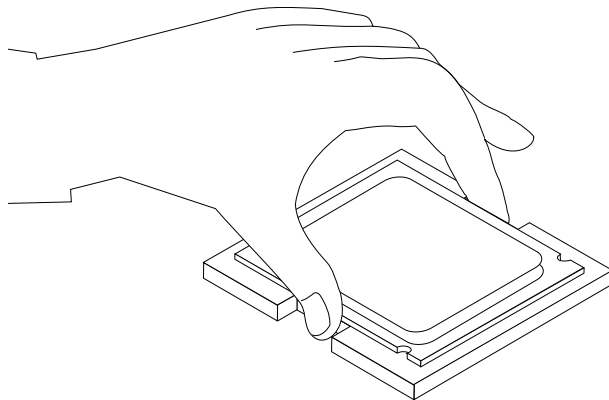
Step 10. To secure the microprocessor in the socket, close the microprocessor retainer and lock it into position with the small handle.

Step 11. Use a thermal grease syringe to place 5 drops of grease on the top of the microprocessor. Each drop of grease should be 0.03ml (3 tick marks on the grease syringe).

Step 12. Reattach the heat-sink assembly and the computer cover.

Replacing an AMD CPU

Note: For this procedure, it helps to lay the computer flat.

Attention: The following instructions apply only for Lenovo H50–55 model.

To replace the CPU

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

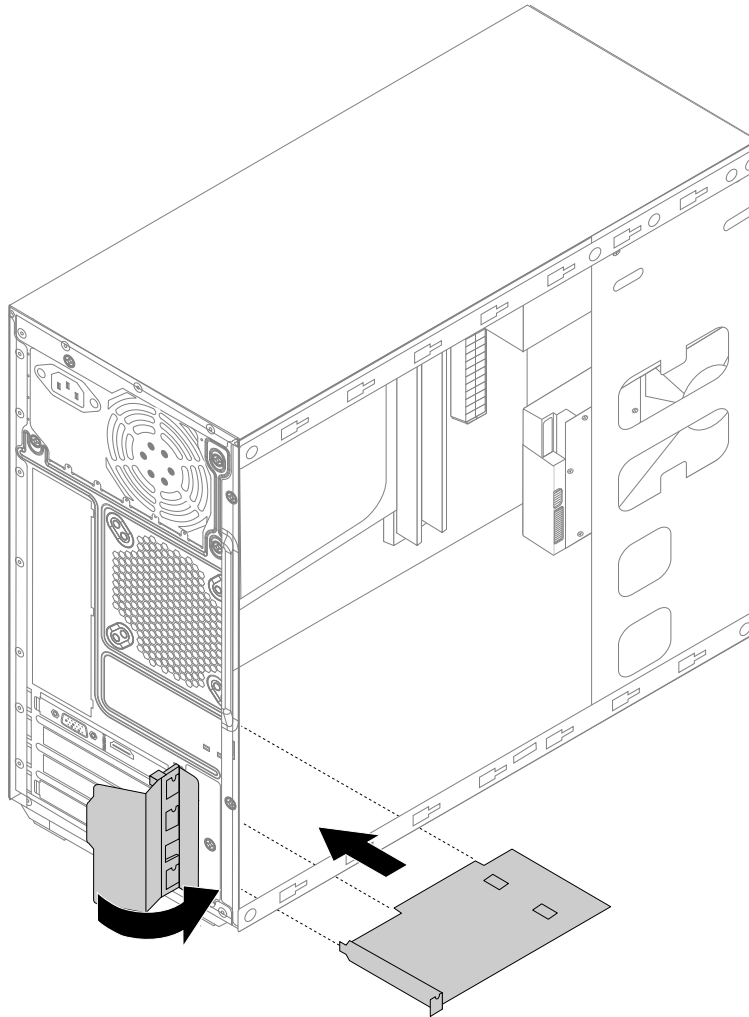Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Replacing the heat-sink assembly. Refer to "Replacing the heat-sink assembly".

Step 6.   Lift the small handle and open the retainer. **1** **2** **3**
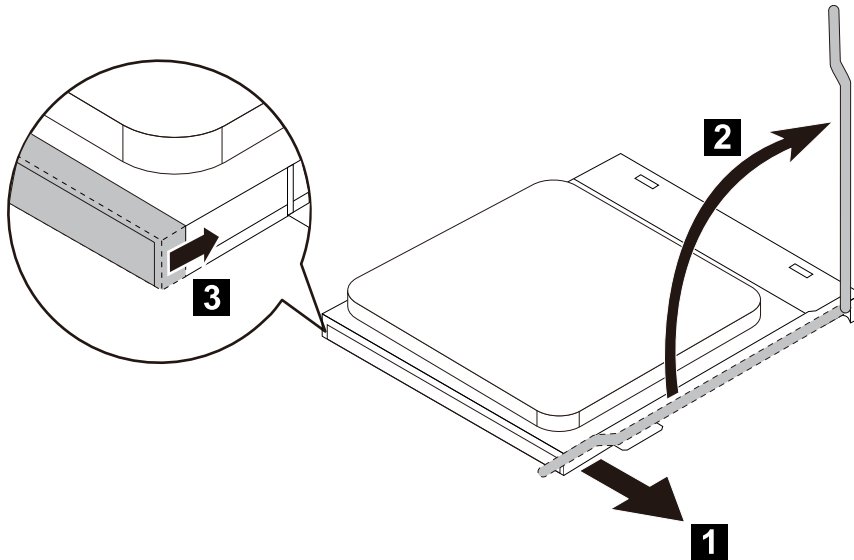
Attention: Do not touch the gold contacts on the bottom of the microprocessor. When handing the microprocessor, touch only the sides.

Step 7. Lift the microprocessor straight up and out of the socket.
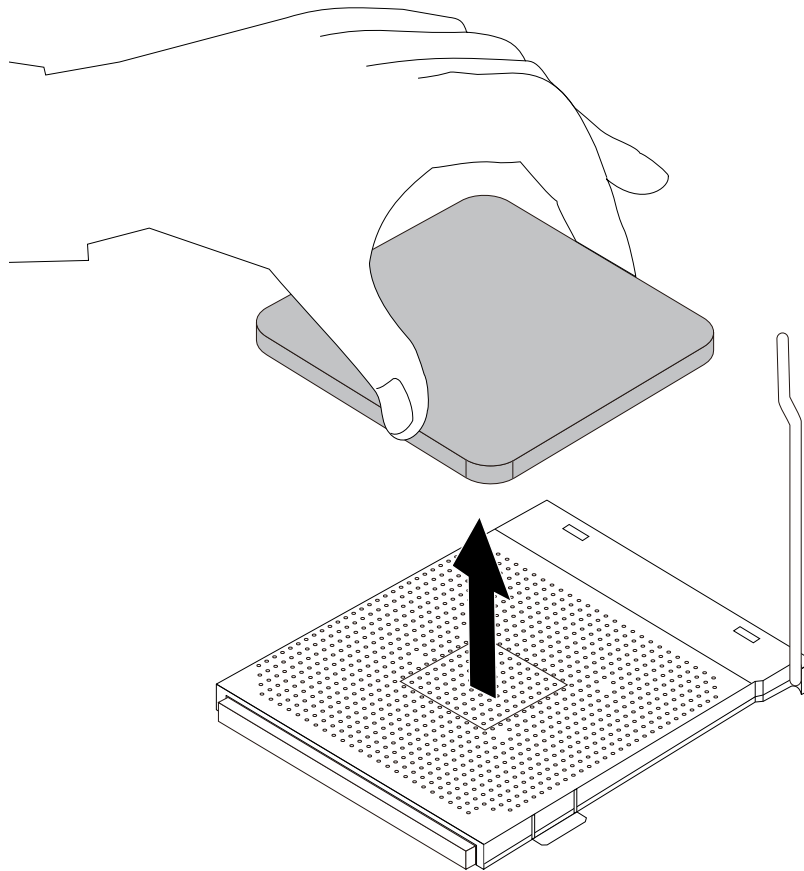
> **Attention:** Do not touch the gold contacts on the bottom of the microprocessor. When handing the microprocessor, touch only the sides.

> **Note:** Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must be kept as clean as possible.

Step 8. Holding the sides of the microprocessor with your fingers, remove the protective cover that protects the gold contacts on the new microprocessor.

Step 9. Holding the sides of the microprocessor with your fingers, position the microprocessor so that the notches on the microprocessor are aligned with the tabs in the microprocessor socket.

> **Important:** To avoid damaging the microprocessor contacts, keep the microprocessor completely level while installing it into the socket.

Step 10. Lower the microprocessor straight down into its socket on the motherboard.
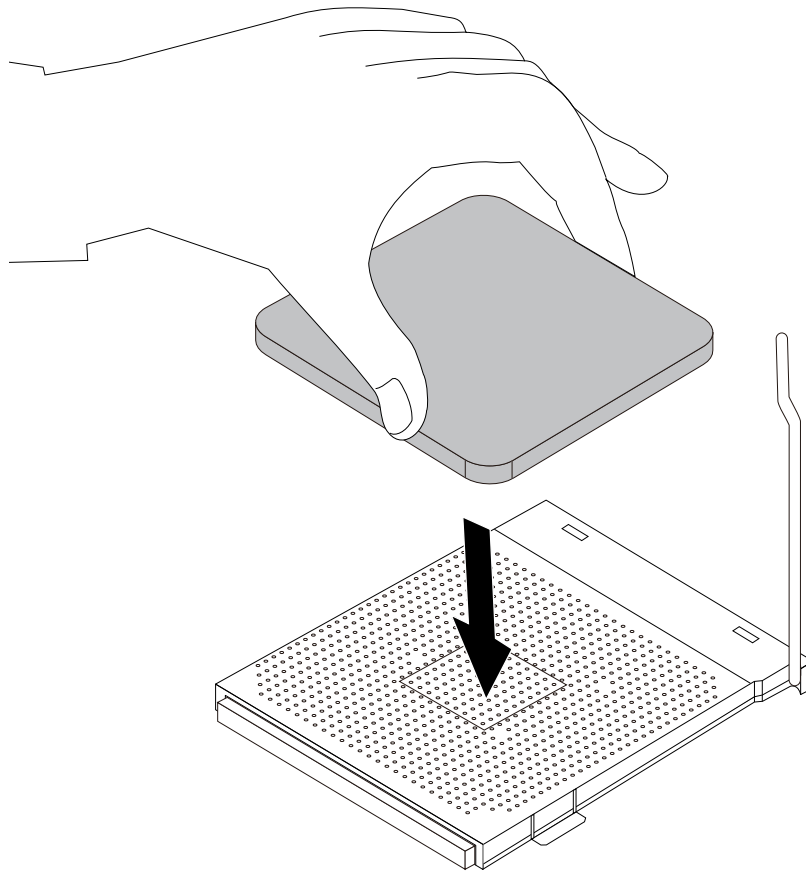
Step 11. To secure the microprocessor in the socket, close the microprocessor retainer and lock it into position with the small handle.

Step 12. Use a thermal grease syringe to place 5 drops of grease on the top of the microprocessor. Each drop of grease should be 0.03ml (3 tick marks on the grease syringe).

Step 13. Reattach the heat-sink assembly and the computer cover.

Replacing the system fan

To replace the system fan: (Selected medels only)

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5. Disconnect the fan power cable from the connector on the motherboard.

Step 6. Pull the system fan assembly out of the chassis.
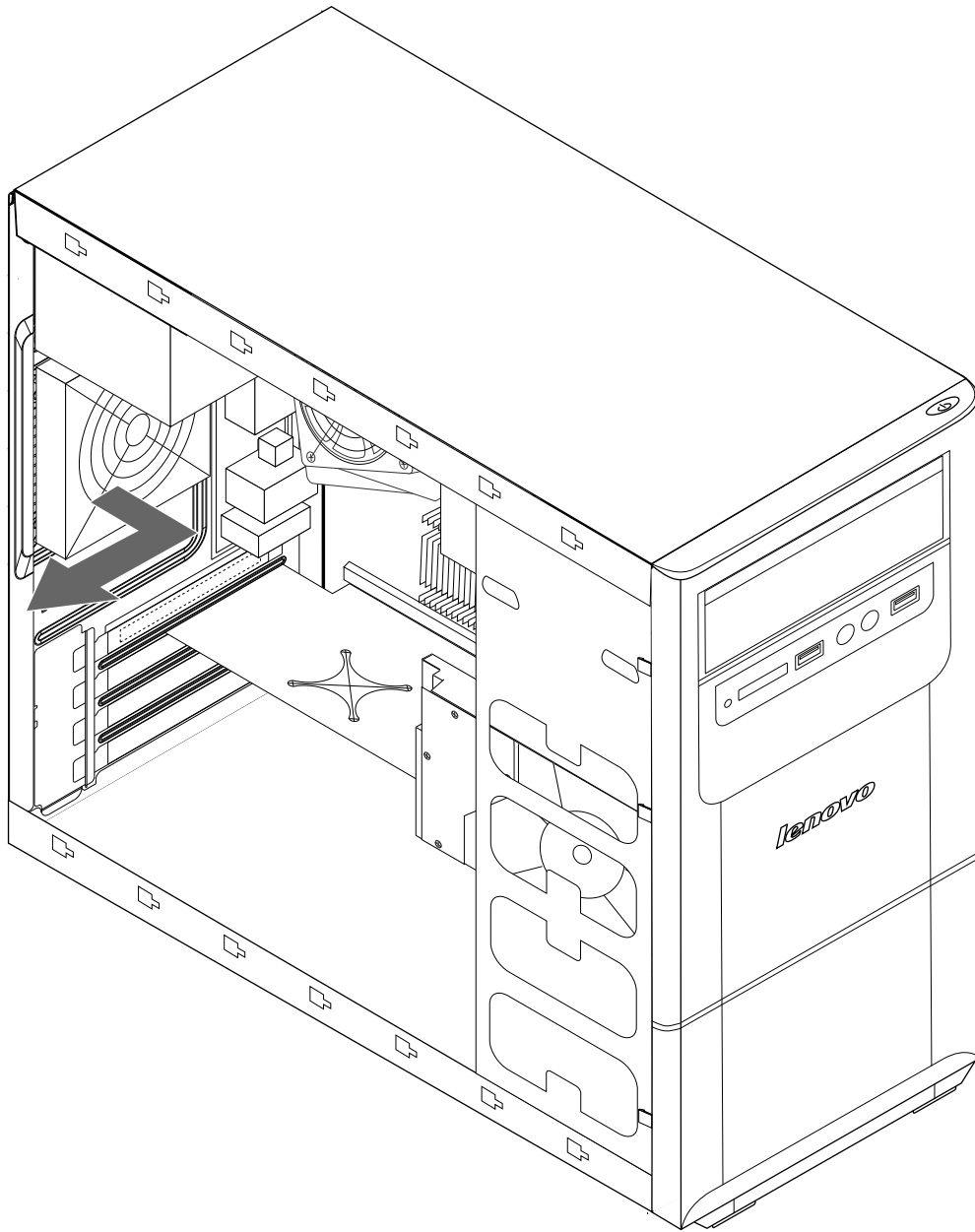
Step 7. To install the new system fan:

  a. Install the new system fan assembly by aligning the rubber mounts of the system fan assembly with the holes on the chassis and then push the rubber mounts through the holes.

  b. Pull on the tips of the rubber mounts until the fan assembly is in place.

  c. Connect the system fan power cable to the connector on the board.
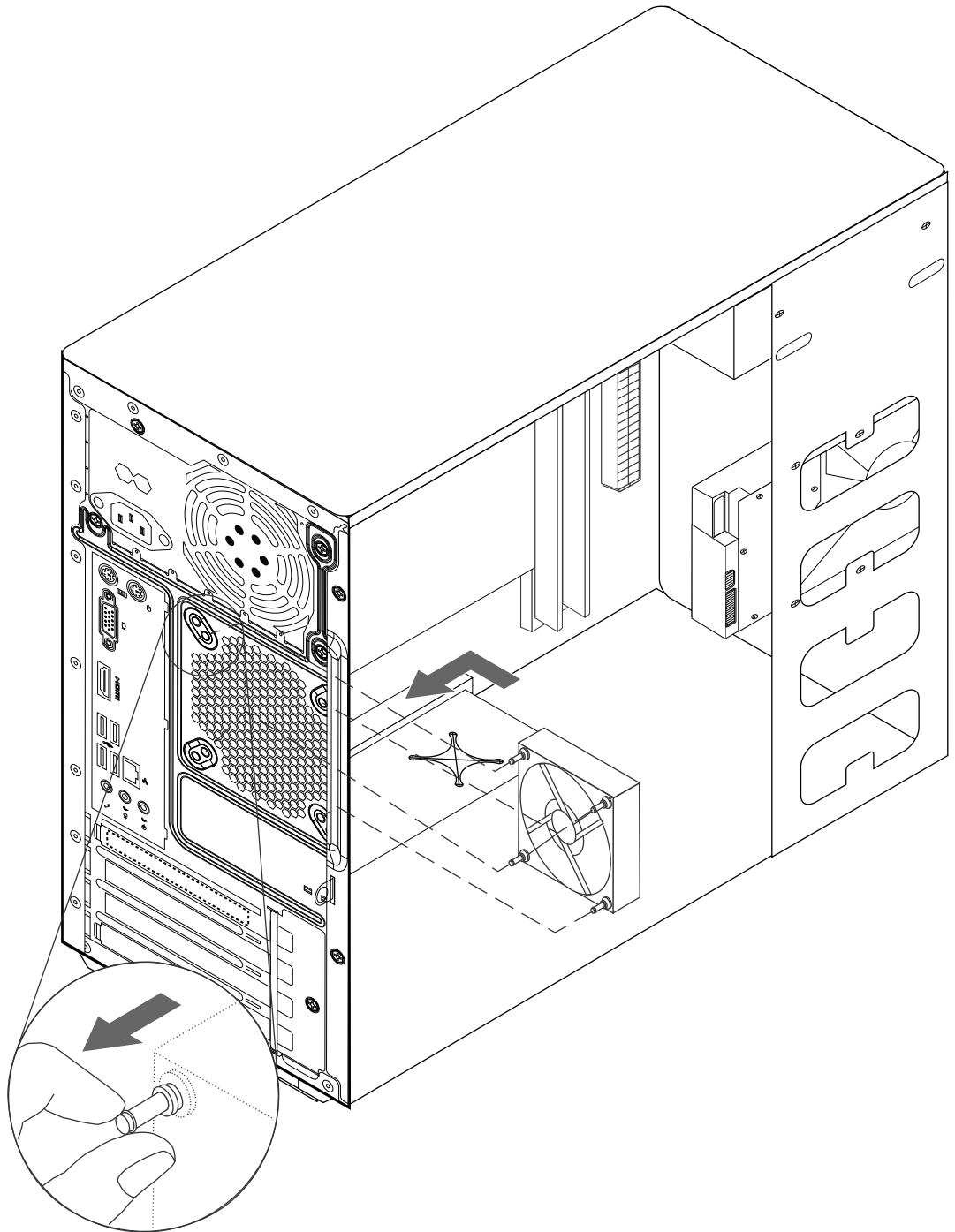
Step 8. Reattach the computer cover.

Replacing the Wi-Fi card

Note: For this procedure, it helps to lay the computer flat.

To replace the Wi-Fi card:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Remove the graphic card. Refer to "Replacing the graphic card."

Step 6.   Disconnect the 2 antenna cables from the Wi-Fi card.

Step 7.   Remove the 2 screws that secure the Wi-Fi card to the motherboard.

Step 8.   Pull the Wi-Fi card upward to remove it from the card
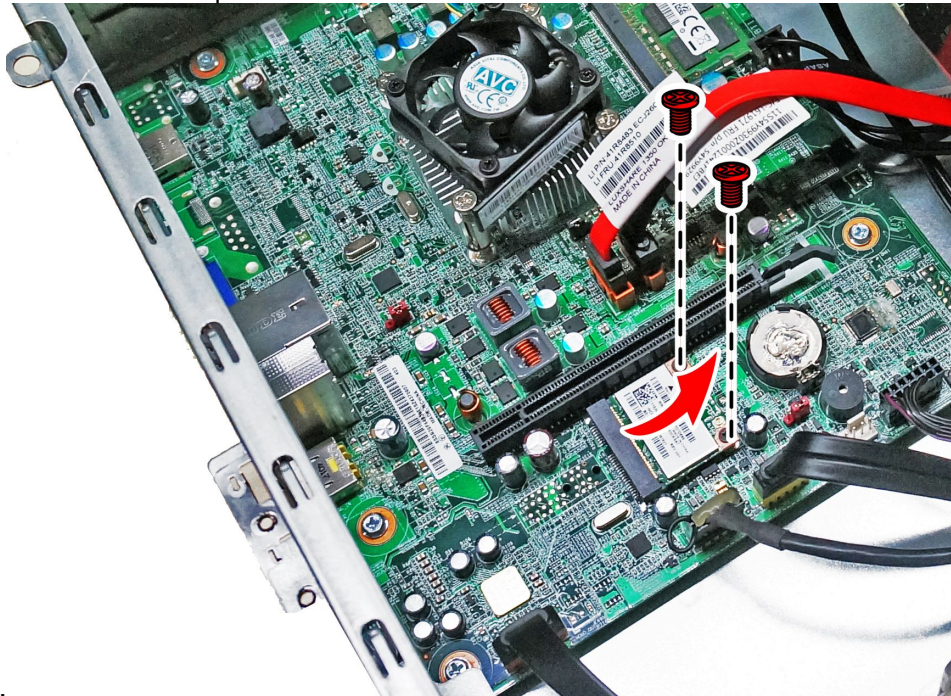
port.

Step 9.   Install the new Wi-Fi card:

   a.   Line up the new Wi-Fi card, then insert it into the same card port.

   b.   Secure the Wi-Fi card to the motherboard with the 2 screws.

   c.   Connect the 2 antenna cables to the new Wi-Fi card.

Step 10.   Reattach the graphic card, computer cover.

Replacing the front card reader module

Note: For this procedure, it helps to lay the computer flat.

To replace the the front card reader module:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the computer cover. Refer to "Removing the computer cover".

Step 5.   Remove the front bezel. Refer to "Removing the front bezel".

Step 6.   Disconnect the data cables from the connectors on motherboard.

Step 7.   Remove the screw that secures the front card reader module to the chassis.

Step 8.   Slide out the card reader module out of chassis.
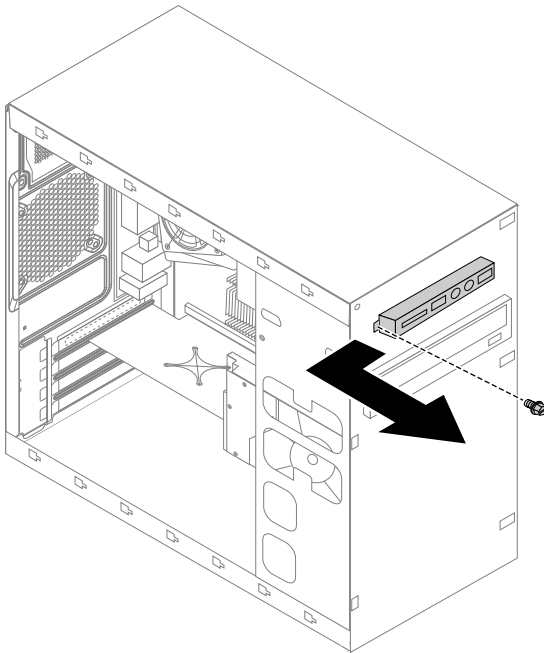
Step 9.   Install the new front card reader module:

      a.   Slide the front card reader module in and secure it with screw.

      b.   Connect the data cables to the motherboard.

Step 10.   Reattach the front bezel, computer cover.

Replacing the motherboard

Note: For this procedure, it helps to lay the computer flat.

To replace the motherboard:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the computer cover. Refer to "Removing the computer cover".

Step 5. Remove the front bezel. Refer to "Removing the front bezel".

Step 6. Remove the memory module. Refer to "Replacing a memory module".

Step 7. Remove the heat-sink assembly. Refer to "Replacing the heat-sink assembly".

Step 8. Remove the CPU. Refer to "Replacing the CPU".

Step 9. Remove the graphic card. Refer to "Replacing the graphic card".

Step 10. Remove the Wi-Fi card. Refer to "Replacing the Wi-Fi card".

Step 11. Remove the system fan. Refer to "Replacing the system fan".

Step 12. Disconnect the all cables from the connectors on motherboard.

Step 13. Remove the 6 screws that secure the motherboard to the chassis.

Step 14. Lift up the motherboard to remove it.
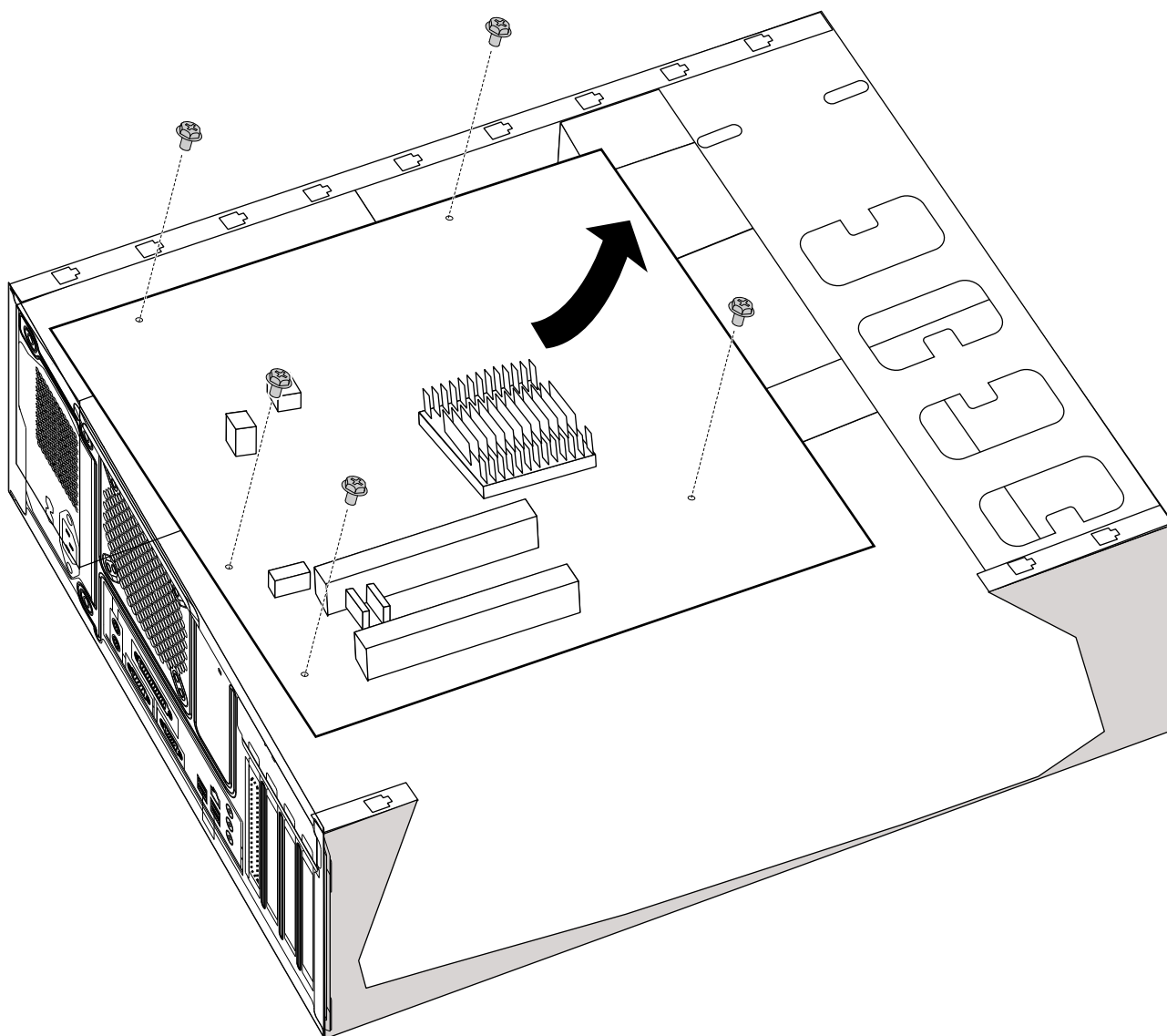
Step 15. Install the new motherboard:

    a.   Line up the holes on the new motherboard with mounting holes on the chassis and secure it with screws.

    b.   Reattach the memory module, Wi-Fi card, heat-sink assembly to the new motherboard.

    c.   Connect the all cables to the new motherboard.

    d.   Reattach the hard disk drive, optical drive, graphic card and the TV-Tuner card.

Step 16. Reattach the computer cover.

Chapter 9. FRU lists-H50–00

This chapter lists the information on the field replaceable units (FRUs).

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Notes: FRUs that have a 1 or 2 in the CRU column are Customer Replaceable Units (CRUs).

- **1**– identifies parts that are fairly simple to replace, requiring few or no tools.
- **2**– identifies parts that are slightly more difficult to replace.
- **N**-identifies parts that are not to be replaced by the customer.

Item #	Description	Lenovo PN	CRU ID
	MB		
	NOK E New BT-D J2900 MB	5B20G18372	N
	W8S E New BT-D J2900 MB	5B20G18369	
	W8P E New BT-D J2900 MB	5B20G18370	
	NOK E New BT-D J1900 MB	5B20G18375	
	W8S E New BT-D J1900 MB	5B20G18374	
	W8P E New BT-D J1900 MB	5B20G18371	
	NOK E New BT-D J1800 MB	5B20G18373	
	W8S E New BT-D J1800 MB	5B20G18368	
	W8P E New BT-D J1800 MB	5B20G18367	
	Cooler		N
	AVC ZEUK00T004 Intel 18W CPU heat sink	31503528	
	Fox PKP737R00K12Z intel 18W CPU heat sink	31503529	
	Memory		2
	M471B5674QH0-YK0 2GB D3L-1600S Memory-HF	1100983	
	HMT425S6AFR6A-PB 2GB D3L-1600S Memory-HF	1100643	
	MT4KTF25664HZ-1G6E1 2GB D3L-1600S Memory	1100956	
	Mic_R D9PSH 2GB D3L-1600S Memory-HF	1100965	
	Mic_S D9PXV 2GB D3L-1600S Memory	1100958	
	M471B5173DB0-YK0 4GB D3L-1600S Memory-HF	1100942	
	HMT451S6BFR8A-PB 4GB D3L-1600S Memory-HF	1100985	
	MT8KTF51264HZ-1G6E1 4GB D3L-1600S Memory-HF	1100957	
	Mic_R D9QBJ 4GB D3L-1600S Memory-HF	1100967	
	Mic_S D9QBJ 4GB D3L-1600S Memory	1100959	
	M471B1G73DB0-YK0 8GB D3L-1600S Memory-HF	1100943	
	HMT41GS6BFR8A-PB 8GB D3L-1600S Memory-HF	1100986	
	MT16KTF1G64HZ-1G6E1	1100635	

Mic_R D9QBJ 8GB D3L-1600S Memory-HF	1101012	
HDD		2
WDXL500A WD5000AAKX-08U6AA0 500G HDD-LH	16200544	
Seagate Pharaoh 4K Non-MC ST500DM002 500G HDD	16200674	
ToshibaMars 4K 500G DT01ACA050 HDD-LH	16200512	
Seagate Grenada BP 1.5 ST1000DM003 1TB HDD	16200528	
ToshibaMars 4K 1TB DT01ACA100 HDD-LH	16200513	
WD XL1000B WD10EZEX-08M2NA0 1TB HDD	16200613	
Seagate Grenada BP2 ST1000DM003 1TB HDD	16200688	
ODD		2
PLDS DH-16D7SH HH SATA Black DVDROMLH	25205800	
HLDS DH50N SATA Black DVDROM DVDROMLH	25210649	
HLDS DH60N SATA Black DVDROM DVDROMLH	25216229	
Panasonic SW430 SATA Black DVDROMLH	25214498	
Panasonic SW440 SATA Black DVDROMLH	25216356	
TSST SH-116CB SATA Black DVDROMLH	25216227	
HLDS GHB0N SATA Black DVDRW DVDROMLH	25214470	
PLDS DH-16AESH SATA Black DVDRWLH(LSOPU)	25213061	
TSST SH-216DB SATA Black DVDRWLH	25213720	
Panasonic SW830 SATA Black DVDRWLH	25213885	
Dis GFX		2
BITLAND@R5 235@1G/A/DB/H Graphics	11202403	
MSI@R5 235@1G/A/DB/H Graphics	11202404	
BITLAND@R5 235@1G/A/DB/H LP Graphics	11202405	
MSI@R5 235@1G/A/DB/H LP Graphics	11202406	
BITLAND@R5 235@2G/A/DB/H Graphics	11202748	
BITLAND@R5 235@2G/A/DB/H LP Graphics	11202749	
BITLAND@Geforce GT 705@1G/A/DB/H Graphics	11202742	
MSI@Geforce GT 705@1G/A/DB/H Graphics	11202743	
BITLAND@Geforce GT 705@1G/A/DB/H LP Graphics	11202744	
MSI@Geforce GT 705@1G/A/DB/H LP Graphics	11202745	
VIDEO_CARD B@Geforce GT 705@1G/A/DB/H	SV10G52014	
VIDEO_CARD M@Geforce GT 705@1G/A/DB/H	SV10G52015	
VIDEO_CARD B@Geforce GT 705@1G/A/DB/H LP	SV10G52019	
VIDEO_CARD M@Geforce GT 705@1G/A/DB/H LP	SV10G52020	
VIDEO_CARD B@Geforce GT 705@2G/A/DB/H	SV10G56197	
VIDEO_CARD M@Geforce GT 705@2G/A/DB/H	SV10G56198	
VIDEO_CARD B@Geforce GT 705@2G/A/DB/H LP	SV10G56199	
VIDEO_CARD M@Geforce GT 705@2G/A/DB/H LP	SV10G56200	
MSI@Geforce GT 720@2G/A/DB/H Graphics	11202746	

	MSI@Geforce GT 720@2G/A/DB/H LP Graphics	11202747	
	Power supply		1
	Delta ADP-65FD BE 65W adapter	36200352	
	Liteon PA-1650-72IA 65W adapter	36200353	
	DELTA ADP-90XD BC 90W common adapter ®	36200415	
	Liteon PA-1900-72IA 90w common adapter®	36200416	
	Wifi		N
	Ltn RTL8723BE 1x1BGN+BT HMC WLAN	20200440	
	Liteon WB335 1x1BGN+BT4.0 HMC WLAN	20200437	
	Screw		N
	JT M2X3 antiskid Screw	31501076	
	WIFI Antenna		N
	LS X315 Front Antenna	31507039	
	LS X315 Rear Antenna	31507040	
	LS 326CT Antenna 550mm Front	SA30G18119	
	LS 326CT Antenna 400mm Rear	SA30G18120	
	Antenna Cover		N
	JT Wi-Fi cover	31501130	
	Rear I/O shield		N
	MACE Bay trail MB Rear IO cover	SM20F86382	
	PSU rear hole shielding		N
	JT 20L chassis PSU cover	31505051	
	JT 314 chassis power supply cover	31506508	
	AVC ATX power supply cover	31506616	
	326 chassis power cover	31501626	
	Card Reader		N
	Bitland RTS5179 7in1 L_Single_CR	11201223	
	Taisol GL827S 7in1 L_Single_CR	11201222	
	Taisol GL827S 7in1 Single_S Reader	11200646	N
	BITLANDRTS5179 7in1 L_Single_CR	11201119	
	Speaker		1
	Lenovo Speaker M0620 (Black)	25013742	
	Front USB&Audio cable		N
	LS USB2.0 F_IO cable_U500A600_321HT	31507416	
	CL USB2.0 F_IO cable_U500A600_321HT	31507417	
	LS USB2.0 F_IO cable_U500A600_326CT	31507414	
	MGE SB2.0 F_IO cable_U500A600_326CT	31507415	

	Cable		N
	LX 370mmSATA cable®	31034778	
	GX 370mmSATA cable(R)	31034820	
	LS 2H285 SATA cable,angle,No Latch(R)	31032989	
	GX 2H285 SATA cable,angle,No Latch®	31033053	
	CL 2H420mmSATA calbe Latch(R)	31506478	
	LX 2H420mmSATA calbe Latch(R)	31024760	
	MGE 2H420mmSATA calbe Latch(R)	31506479	
	LX 250mm SATA cable 2 latch	31043145	
	GS 250mm SATA cable 2 latch	31043146	
	LX SATA power cable(300mm_300mm)	31502005	
	GX SATA power cable(300mm_300mm)	31502006	
	Touch Pad		N
	Chicony TGR1226 2.4G touchpad BLACK	25210789	
	VGA Cover		N
	JT VGA Rubber cover	31049015	
	MACE VGA Rubber cover - Optional	31505052	
	KB & Mouse		1
	Sunrex EKB-10YA(US) B-Silk USB KB-LVT8	25209111	
	Primax KB4721(US) B-Silk USB KB-LVT8	25209112	
	Sunrex EKB-10YA(TW) B-Silk USB KB-LVT8	25209114	
	Sunrex EKB-10YA(TH) B-Silk USB KB-LVT8	25209115	
	Sunrex EKB-10YA(CZ-SL) B-S USB KB-LVT8	25209116	
	Sunrex EKB-10YA(IN) B-Silk USB KB-LVT8	25209117	
	Sunrex EKB-10YA(RU) B-Silk USB KB-LVT8	25209118	
	Sunrex EKB-10YA(UK) B-Silk USB KB-LVT8	25209119	
	Sunrex EKB-10YA(Nordic) B-S USB KB-LVT8	25209120	
	Sunrex EKB-10YA(LA) B-Silk USB KB-LVT8	25209121	
	Sunrex EKB-10YA(AR) B-Silk USB KB-LVT8	25209122	
	Sunrex EKB-10YA(SW) B-Silk USB KB-LVT8	25209123	
	Sunrex EKB-10YA(GE) B-Silk USB KB-LVT8	25209124	
	Sunrex EKB-10YA(TR) B-Silk USB KB-LVT8	25209125	
	Sunrex EKB-10YA(SP) B-Silk USB KB-LVT8	25209126	
	Sunrex EKB-10YA(SL) B-Silk USB KB-LVT8	25209127	
	Sunrex EKB-10YA(IT) B-Silk USB KB-LVT8	25209128	
	Sunrex EKB-10YA(HB) B-Silk USB KB-LVT8	25209129	
	Sunrex EKB-10YA(FR) B-Silk USB KB-LVT8	25209130	
	Sunrex EKB-10YA(GK) B-Silk USB KB-LVT8	25209131	
	Sunrex EKB-10YA(HG) B-Silk USB KB-LVT8	25209132	
	Sunrex EKB-10YA(BG) B-Silk USB KB-LVT8	25209133	

Sunrex EKB-10YA(HR) B-Silk USB KB-LVT8	25209134	
Sunrex EKB-10YA(JP) B-Silk USB KB-LVT8	25209135	
Sunrex EKB-10YA(EN-FR) B-S USB KB-LVT8	25209136	
Sunrex EKB-10YA(PT) B-Silk USB KB-LVT8	25209137	
Sunrex EKB-10YA(BE-EN) B-S USB KB-LVT8	25209138	
Sunrex EKB-10YA(DU) B-S USB KB-LVT8	25209139	
Liteon LXH-SM-8825 B-Silk Mouse	25200528	
Sunrex LXH-EMS-10ZA B-Silk Mouse	25200530	
Primax M300 USB gesture mouse BLK	25213876	
Primax M300 USB gesture mouse BLK-Israel	25214502	
Chassis For H50-00		N
MACE LX-321HT chassis	30500525	
MACE LX-321HT Chassis	5C80G59894	
MACE LX-321HT Chassis F/Bezel	5CB0G59893	
MACE LX-321HT USB&CR Bracket	5B40G59900	
JT 328BT-23L Wlan Antenna Cover	5CB0G59219	
JT H81MB rearIO shielding	31504156	
LS 600mm 321HT&326CT LED cable	31507411	
JT 600mm 321HT&326CT LED cable	31507412	
MGE 600mm 321HT&326CT LED cable	31507413	
JT LX-321HT2 chassis	30500526	
JT LX-321HT2 Chassis	5C80G59901	
JT LX-321HT2 Chassis F/Bezel	5CB0G59902	
JT LX-321HT2 USB&CR Bracket	5B40G59891	
JT 328BT-23L Wlan Antenna Cover	5CB0G59219	
JT H81MB rearIO shielding	31504156	
LS 600mm 321HT&326CT LED cable	31507411	
JT 600mm 321HT&326CT LED cable	31507412	
MGE 600mm 321HT&326CT LED cable	31507413	
Power Cord		1
Longwell Black single head 1.0M3wire ULCSA Power cord	31033857	
Volex 1.0M C5US Power cord	31033858	
Luxshare 1.0M C5 US Power cord	31049517	
Longwell Black single head 1.0M SAA Power cord	31035397	
Volex 1.0M C5 Macao Power cord	31049500	
Luxshare 1.0M C5 Macao Power cord	31049520	
Longwell 1.0M C5 2pin Japan power cord	31503423	
Volex 1.0M C5 2pin Japan power cord	31503424	
Luxshare 1.0M C5 2pin Japan power cord	31503425	
Grandsun Black single head 1.0M3wire CCC Power cord(R)	31032953	

Luxshare 1.0M C5 CCC Power cord	31045147
Longwell Black single head 1.0M ASTA Power cord	31035396
Volex 1.0M C5 UK Power cord	31049496
Luxshare 1.0M C5 UK Power cord	31503352
Longwell Black single head 1.0M VDE Power cord	31035332
Volex 1.0M C5 Europe Power cord	31049497
Luxshare 1.0M C5 Europe Power cord	31049518
Longwell Black single head 1.0M India Power cord	31035395
Luxshare 1.0M C5 India Power cord	31503353
Longwell Black single head 1.0M Italy C5 Power cord®	31039104
Volex 1.0M C5 Italy Power cord	31049504
Luxshare 1.0M C5 Italy Power cord	31503359
Longwell Black single head 1.0M Brazil Power cord®	31035828
Volex 1.0M C5 Brazil Power cord	31049505
Luxshare 1.0M C5 Brazil Power cord	31503357
Longwell Black single head 1.0M Argentina C5 Power cord®	31039100
Volex 1.0M C5 Latin America Power cord	31049507
Luxshare 1.0M C5 Latin America Power cord	31503356
Longwell Black single head 1.0M Denmark C5 Power cord®	31039101
Volex 1.0M C5 Denmark Power cord	31049503
Luxshare 1.0M C5 Denmark Power cord	31503360
Longwell Black single head 1.0M Switzerland C5 Power cord®	31039103
Volex 1.0M C5 Switzerland Power cord	31049508
Luxshare 1.0M C5 Switzerland Power cord	31503361
Longwell Black single head 1.0M Israel C5 Power cord®	31039107
Volex 1.0M C5 Israel Power cord	31049502
Luxshare 1.0M C5 Israel Power cord	31503362
Longwell Black single head 1.0M Taiwan C5 Power cord®	31038885
Volex 1.0M C5 Taiwan Power cord	31049499
Longwell Black single head 1.0M Korea C5 Power cord®	31039106
Volex 1.0M C5 Korea Power cord	31049498
Luxshare 1.0M C5 Korea Power cord	31503358
Longwell Black single head 1.0M SA C5 Power cord®	31039105
Volex 1.0M C5 South Africa Power cord	31049501
Luxshare 1.0M C5 South Africa Power cord	31503355
LW BLK1.8M UL CSA Power Cord(R)	31026357
GS BLK1.8M UL power cord®	31033217
VL BLK1.8M UL CSA Power Cord®	31026145
Luxshare 1.8M C13 US Power cord	31049521
LW BLK1.8M ANE Power Cord®	31026350

VL BLK1.8M ANE Power Cord®	31026140
Luxshare 1.8M C13 Macao Power cord	31049524
LW 1.8M JAPAN Power Cord®	31039730
Volex 1.8M C13 Japan Power cord	31049514
Luxshare 1.8M C13 Japan Power cord	31049523
Grandsun Black single head 1.8MCCC Power cord(R)	31028776
LX(ASAP) 1.8M CCC C13 power cord®	31040179
LW BLK1.8M BS Power Cord®	31026096
VL BLK1.8M BS Power Cord(R)	31026082
LW BLK1.8M VDE Power Cord®	31026355
VL BLK1.8M VDE Power Cord®	31026144
Luxshare 1.8M C13 Europe Power cord	31049522
Longwell Black single head 1.8MIndia Power cord®	31033216
LW BLK1.8M BSMI Power Cord®	31026349
VL BLK1.8M BSMI Power Cord®	31026146
LW BLK1.8M SABS Power Cord®	31031394
Volex 1.8M C13 South Africa Power cord	31049509
Longwell Black single head 1.8M C13 IRAM Power cord®	31036980
Volex 1.8M C13 Latin America Power cord	31049515
Longwell Black single head 1.8M C13 Brazil Power cord®	31038784
Volex 1.8M C13 Brazil Power cord	31049513
Longwell Black single head 1.8M C13 Korea Power cord®	31026351
VL BLK1.8M KTL Power Cord®	31026143
Longwell 1.8M Italy C13 power cord®	31039726
Volex 1.8M C13 Italy Power cord	31049512
Longwell 1.8M Denmark C13 power cord®	31039729
Volex 1.8M C13 Denmark Power cord	31049511
Longwell 1.8M SEV C13 power cord®	31039732
Volex 1.8M C13 Switzerland Power cord	31049516
Longwell 1.8M Israel C13 power cord®	31039728
Volex 1.8M C13 Israel Power cord	31049510

Chapter 10. FRU lists-H50–05

This chapter lists the information on the field replaceable units (FRUs).

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Notes: FRUs that have a 1 or 2 in the CRU column are Customer Replaceable Units (CRUs).

- **1**– identifies parts that are fairly simple to replace, requiring few or no tools.
- **2**– identifies parts that are slightly more difficult to replace.
- **N**-identifies parts that are not to be replaced by the customer.

Item #	Description	Lenovo PN	CRU ID
	MB		
	NOK MSI Beema A8-6410 MB	5B20G06133	N
	W8S MSI Beema A8-6410 MB	5B20G06117	
	W8P MSI Beema A8-6410 MB	5B20G06125	
	NOK MSI Beema A6-6310 MB	5B20G06126	
	W8S MSI Beema A6-6310 MB	5B20G06127	
	W8P MSI Beema A6-6310 MB	5B20G06128	
	NOK MSI Beema A4-6210 MB	5B20G06129	
	W8S MSI Beema A4-6210 MB	5B20G06124	
	W8P MSI Beema A4-6210 MB	5B20G06123	
	NOK MSI Beema E2-6110 MB	5B20G06122	
	W8S MSI Beema E2-6110 MB	5B20G06132	
	W8P MSI Beema E2-6110 MB	5B20G06131	
	NOK MSI Beema E1-6010 MB	5B20G06130	
	W8S MSI Beema E1-6010 MB	5B20G06134	
	W8P MSI Beema E1-6010 MB	5B20G06135	
	Thermal		2
	Taisol CECA022836A6 AMD 18W cooler	31501864	
	AVC ZEUK00T001 AMD 18W cooler	31501863	
	Memory		2
	M378B5773QB0-CK0 2GB D3 -1600 Memory-HF	1100908	
	HMT425U6AFR6C-PB 2GB D3 -1600 Memory-HF	1100653	
	MT4JTF25664AZ-1G6E1 2GB D3-1600 Memory	1100954	
	Mic_R D9PSH 2GB D3L-1600 Memory-HF	1100966	
	Mic_S D9PXV 2GB D3-1600 Memory	1100792	
	M378B5173DB0-CK0 4GB D3 -1600 Memory-HF	1100944	
	HMT451U6BFR8C-PB 4GB D3-1600 Memory-HF	1100988	

MT8JTF51264AZ-1G6E1 4GB D3-1600 Memory	1100955	
Mic_R D9QBJ 4GB D3L-1600 M2 Memory	1100807	
Mic_S D9QBJ 4GB D3-1600 M2 Memory	1100682	
M378B5773QB0-CK0 2GB D3 -1600 Memory-HF	1100908	
M378B5173DB0-CK0 4GB D3 -1600 Memory-HF	1100944	
HMT425U6AFR6C-PB 2GB D3 -1600 Memory-HF	1100653	
HMT451U6BFR8C-PB 4GB D3-1600 Memory-HF	1100988	
Mic_R D9PSH 2GB D3L-1600 Memory-HF	1100966	
Mic_R D9QBJ 4GB D3L-1600 M2 Memory	1100807	
M378B1G73DB0-CK0 8GB D3 -1600 Memory-HF	1100945	
HMT41GU6BFR8C-PB 8GB D3-1600 Memory-HF	1100989	
MT16JTF1G64AZ-1G6E1 8GB D3-1600 Memory	1100669	
Mic_R D9QBJ 8GB D3L-1600 Memory-HF	1101011	
HDD		2
WD XL500A 6G Damper	16200544	
Seagate Pharaoh 4K-Non-MC	16200674	
Toshiba Mars	16200512	
Seagate Grenada BP 1.5	16200528	
Toshiba Mars	16200513	
WD XL1000B	16200613	
Seagate Grenada BP 2	16200688	
ODD		2
PLDS DH-16D7SH HH SATA Black DVDROMLH	25205800	
HLDS DH50N SATA Black DVDROM ODD LH	25210649	
HLDS DH60N SATA Black DVDROM ODD LH	25216229	
Panasonic SW430 SATA Black DVDROMLH	25214498	
Panasonic SW440 SATA Black DVDROMLH	25216356	
TSST SH-116CB SATA Black DVDROMLH	25216227	
HLDS GHB0N SATA Black DVDRW ODD LH	25214470	
PLDS DH-16AESH SATA Black DVDRWLH(LSOPU)	25213061	
TSST SH-216DB SATA Black DVDRWLH	25213720	
Panasonic SW830 SATA Black DVDRWLH	25213885	

	Dis GFX		2
	Bitland@R5 235@1G/A/DB/H Graphics	11202403	
	MSI@R5 235@1G/A/DB/H Graphics	11202404	
	Bitland@R5 235@1G/A/DB/H LP Graphics	11202405	
	MSI@R5 235@1G/A/DB/H LP Graphics	11202406	
	Bitland@R5 235@2G/A/DB/H Graphics	11202748	
	Bitland@R5 235@2G/A/DB/H LP Graphics	11202749	
	MSI@Geforce GT 720@2G/A/DB/H Graphics	11202746	
	MSI@Geforce GT 720@2G/A/DB/H LP Graphics	11202747	
	Bitland@Geforce GT 705@1G/A/DB/H Graphics	11202742	
	MSI@Geforce GT 705@1G/A/DB/H Graphics	11202743	
	VIDEO_CARD B@Geforce GT 705@1G/A/DB/H	SV10G52014	
	VIDEO_CARD M@Geforce GT 705@1G/A/DB/H	SV10G52015	
	VIDEO_CARD B@Geforce GT 705@2G/A/DB/H	SV10G56197	
	VIDEO_CARD M@Geforce GT 705@2G/A/DB/H	SV10G56198	
	Bitland@Geforce GT 705@1G/A/DB/H LP Graphics	11202744	
	MSI@Geforce GT 705@1G/A/DB/H LP Graphics	11202745	
	VIDEO_CARD B@Geforce GT 705@1G/A/DB/H LP	SV10G52019	
	VIDEO_CARD M@Geforce GT 705@1G/A/DB/H LP	SV10G52020	
	VIDEO_CARD B@Geforce GT 705@2G/A/DB/H LP	SV10G56199	
	VIDEO_CARD M@Geforce GT 705@2G/A/DB/H LP	SV10G56200	
	Adapter		1
	Delta ADP-65FD BE 65W adapter	36200352	
	Liteon PA-1650-72IA 65W adapter	36200353	
	DELTA ADP-90XD BC 90W common adapter ®	36200415	
	Liteon PA-1900-72IA 90w common adapter®	36200416	
	DELTA ADP-120ZB BBHT common 120W adapter	36200439	
	Liteon PA-1121-04LB 120w common adapter	36200440	
	WIFI		N
	Ltn RTL8723BE 1x1BGN+BT HMC WLAN	20200440	
	Liteon WB335 1x1BGN+BT4.0 HMC WLAN	20200437	
	Screw		N
	JT M2X3 antiskid Screw	31501076	
	WIFI Antenna		N
	LS X315 Front Antenna	31507039	
	LS X315 Rear Antenna	31507040	
	LS 326CT Antenna 550mm Front	SA30G18119	
	LS 326CT Antenna 400mm Rear	SA30G18120	
	Antenna Cover		N
	JT Wi-Fi cover	31501130	

Chassis		N
MACE LX-321HT chassis	30500525	
MACE LX-321HT Chassis	5C80G59894	
MACE LX-321HT Chassis F/Bezel	5CB0G59893	
MACE LX-321HT USB&CR Bracket	5B40G59900	
JT 328BT-23L Wlan Antenna Cover	5CB0G59219	
JT H81MB rearIO shielding	31504156	
LS 600mm 321HT&326CT LED cable	31507411	
JT 600mm 321HT&326CT LED cable	31507412	
MGE 600mm 321HT&326CT LED cable	31507413	
JT LX-321HT2 chassis	30500526	
JT LX-321HT2 Chassis	5C80G59901	
JT LX-321HT2 Chassis F/Bezel	5CB0G59902	
JT LX-321HT2 USB&CR Bracket	5B40G59891	
JT 328BT-23L Wlan Antenna Cover	5CB0G59219	
JT H81MB rearIO shielding	31504156	
LS 600mm 321HT&326CT LED cable	31507411	
JT 600mm 321HT&326CT LED cable	31507412	
MGE 600mm 321HT&326CT LED cable	31507413	
Card Reader		N
Bitland RTS5179 7in1 L_Single_CR	11201223	
Taisol GL827S 7in1 L_Single_CR	11201222	
Taisol GL827S 7in1 Single_S Reader	11200646	
Bitland RTS5179 7in1 Single_S Reader	11201119	
Speaker		1
Lenovo Speaker M0620（Black）	25013742	
Cable		N
LS USB2.0 F_IO cable_U500A600_321HT	31507416	
CL USB2.0 F_IO cable_U500A600_321HT	31507417	
LS USB2.0 F_IO cable_U500A600_326CT	31507414	
MGE SB2.0 F_IO cable_U500A600_326CT	31507415	
LX front cable U770mm_A680mm	31502718	
GX front cable U770mm_A680mm	31502719	
Mckey front cable U770mm_A680mm	31502720	
LX370mmSATA cable®	31034778	
GX370mmSATA cable(R)	31034820	
LS 2H285 SATA cable,angle,No Latch(R)	31032989	
GX 2H285 SATA cable,angle,No Latch®	31033053	
CL 2H420mmSATA calbe Latch(R)	31506478	
LX 2H420mmSATA calbe Latch(R)	31024760	

MGE 2H420mmSATA calbe Latch(R)	31506479	
LX 250mm SATA cable 2 latch	31043145	
GS 250mm SATA cable 2 latch	31043146	
LX SATA power cable(300mm_300mm)	31502005	
GX SATA power cable(300mm_300mm)	31502006	
Touch Pad		N
Chicony TGR1226 2.4G touchpad BLK final	25212969	
Cover		N
JT VGA Rubber cover	31049015	
MACE VGA Rubber cover - Optional	31505052	
JT HDMI Rubber cover	31049017	
KB & Mice		1
Sunrex EKB-10YA(US) B-Silk USB KB-LVT8	25209111	
Primax KB4721(US) B-Silk USB KB-LVT8	25209112	
Sunrex EKB-10YA(TW) B-Silk USB KB-LVT8	25209114	
Sunrex EKB-10YA(TH) B-Silk USB KB-LVT8	25209115	
Sunrex EKB-10YA(CZ-SL) B-S USB KB-LVT8	25209116	
Sunrex EKB-10YA(IN) B-Silk USB KB-LVT8	25209117	
Sunrex EKB-10YA(RU) B-Silk USB KB-LVT8	25209118	
Sunrex EKB-10YA(UK) B-Silk USB KB-LVT8	25209119	
Sunrex EKB-10YA(Nordic) B-S USB KB-LVT8	25209120	
Sunrex EKB-10YA(LA) B-Silk USB KB-LVT8	25209121	
Sunrex EKB-10YA(AR) B-Silk USB KB-LVT8	25209122	
Sunrex EKB-10YA(SW) B-Silk USB KB-LVT8	25209123	
Sunrex EKB-10YA(GE) B-Silk USB KB-LVT8	25209124	
Sunrex EKB-10YA(TR) B-Silk USB KB-LVT8	25209125	
Sunrex EKB-10YA(SP) B-Silk USB KB-LVT8	25209126	
Sunrex EKB-10YA(SL) B-Silk USB KB-LVT8	25209127	
Sunrex EKB-10YA(IT) B-Silk USB KB-LVT8	25209128	
Sunrex EKB-10YA(HB) B-Silk USB KB-LVT8	25209129	
Sunrex EKB-10YA(FR) B-Silk USB KB-LVT8	25209130	
Sunrex EKB-10YA(GK) B-Silk USB KB-LVT8	25209131	
Sunrex EKB-10YA(HG) B-Silk USB KB-LVT8	25209132	
Sunrex EKB-10YA(BG) B-Silk USB KB-LVT8	25209133	
Sunrex EKB-10YA(HR) B-Silk USB KB-LVT8	25209134	
Sunrex EKB-10YA(JP) B-Silk USB KB-LVT8	25209135	
Sunrex EKB-10YA(EN-FR) B-S USB KB-LVT8	25209136	
Sunrex EKB-10YA(PT) B-Silk USB KB-LVT8	25209137	
Sunrex EKB-10YA(BE-EN) B-S USB KB-LVT8	25209138	
Sunrex EKB-10YA(DU) B-S USB KB-LVT8	25209139	

Liteon LXH-SM-8825 B-Silk Mouse	25200528
Sunrex LXH-EMS-10ZA B-Silk Mouse	25200530
Primax M300 USB gesture mouse BLK	25213876
Primax M300 USB gesture mouse BLK-Israel	25214502
Liteon SK-8861(US) 2.4G KB-Black8	25209175
Liteon SK-8861(US-MY) 2.4G KB-Black8	25209176
Liteon SK-8861(TW) 2.4G KB-Black8	25209177
Liteon SK-8861(TH) 2.4G KB-Black8	25209178
Liteon SK-8861(CS-SK) 2.4G KB-Black8	25209179
Liteon SK-8861(US-IN) 2.4G KB-Black8	25209180
Liteon SK-8861(RU) 2.4G KB-Black8	25209181
Liteon SK-8861(GB) 2.4G KB-Black8	25209182
Liteon SK-8861(Nordic) 2.4G KB-Black8	25209183
Liteon SK-8861(LA) 2.4G KB-Black8	25209184
Liteon SK-8861(LA-AR) 2.4G KB-Black8	25209185
Liteon SK-8861(SA) 2.4G KB-Black8	25209186
Liteon SK-8861(CH) 2.4G KB-Black8	25209187
Liteon SK-8861(DE) 2.4G KB-Black8	25209188
Liteon SK-8861(TR) 2.4G KB-Black8	25209189
Liteon SK-8861(ES) 2.4G KB-Black8	25209190
Liteon SK-8861(SL) 2.4G KB-Black8	25209191
Liteon SK-8861(IT) 2.4G KB-Black8	25209192
Liteon SK-8861(IL) 2.4G KB-Black8	25209193
Liteon SK-8861(FR) 2.4G KB-Black8	25209194
Liteon SK-8861(GR) 2.4G KB-Black8	25209195
Liteon SK-8861(HU) 2.4G KB-Black8	25209196
Liteon SK-8861(BG) 2.4G KB-Black8	25209197
Liteon SK-8861(KR) 2.4G KB-Black8	25209198
Liteon SK-8861(JP) 2.4G KB-Black8	25209199
Liteon SK-8861(EN-FR) 2.4G KB-Black8	25209200
Liteon SK-8861(PT) 2.4G KB-Black8	25209201
Liteon SK-8861(BE-EN) 2.4G KB-Black8	25209202
Liteon SK-8861(DU) 2.4G KB-Black8	25209203
Liteon SM-8861(WW) Mouse Black	25203464
Liteon SM-8861 Mouse(No Battery) Black	25203465
Liteon SM-8861 Mouse(MY) Black	25203466
Liteon SM-8861(JP)Mouse-Black	25-205773

Power Cord		1
Longwell Black single head 1.0m3wire ULCSA Power cord	31033857	
Volex 1.0M C5 US Power cord	31033858	
Luxshare 1.0M C5 US Power cord	31049517	
Longwell Black single head 1.0m SAA Power cord	31035397	
Volex 1.0M C5 Macao Power cord	31049500	
Luxshare 1.0M C5 Macao Power cord	31049520	
Longwell 1.0M C5 2pin Japan power cord	31503423	
Volex 1.0M C5 2pin Japan power cord	31503424	
Luxshare 1.0M C5 2pin Japan power cord	31503425	
Grandsun Black single head 1.0m3wire CCC Power cord (R)	31032953	
Luxshare 1.0M C5 CCC Power cord	31045147	
Longwell Black single head 1.0m ASTA Power cord	31035396	
Volex 1.0M C5 UK Power cord	31049496	
Luxshare 1.0M C5 UK Power cord	31503352	
Longwell Black single head 1.0m VDE Power cord	31035332	
Volex 1.0M C5Europe Power cord	31049497	
Luxshare 1.0M C5 Europe Power cord	31049518	
Longwell Black single head 1.0m India Power cord	31035395	
Luxshare 1.0M C5 India Power cord	31503353	
Longwell Black single head 1.0m Italy C5 Power cord ®	31039104	
Volex 1.0M C5 Italy Power cord	31049504	
Luxshare 1.0M C5 Italy Power cord	31503359	
Longwell Black single head 1.0m Brazil Power cord ®	31035828	
Volex 1.0M C5 Brazil Power cord	31049505	
Luxshare 1.0M C5 Brazil Power cord	31503357	
Longwell Black single head 1.0m Argentina C5 Power cord ®	31039100	
Volex 1.0M C5 LA Power cord	31049507	
Luxshare 1.0M C5 LA Power cord	31503356	
Longwell Black single head 1.0m Denmark C5 Power cord ®	31039101	
Volex 1.0M C5 Denmark Power cord	31049503	
Luxshare 1.0M C5 Denmark Power cord	31503360	
Longwell Black single head 1.0m Switzerland C5 Power cord ®	31039103	
Volex 1.0M C5 Switzerland Power cord	31049508	
Luxshare 1.0M C5 Switzerland Power cord	31503361	
Longwell Black single head 1.0m Israel C5 Power cord ®	31039107	
Volex 1.0M C5 Israel Power cord	31049502	
Luxshare 1.0M C5 Israel Power cord	31503362	
Longwell Black single head 1.0m Taiwan C5 Power cord ®	31038885	
Volex 1.0M C5TW Power cord	31049499	

Longwell Black single head 1.0m Korea C5 Power cord ®	31039106
Volex 1.0M C5 Korea Power cord	31049498
Luxshare 1.0M C5 Korea Power cord	31503358
Longwell Black single head 1.0m SA C5 Power cord ®	31039105
Volex 1.0M C5 South Africa Power cord	31049501
Luxshare 1.0M C5 South Africa Power cord	31503355
LW BLK1.8m UL CSA Power Cord(R)	31026357
GS BLK1.8m UL power cord®	31033217
VL BLK1.8m UL CSA Power Cord®	31026145
Luxshare 1.8M C13 US Power cord	31049521
LW BLK1.8m ANE Power Cord®	31026350
VL BLK1.8m ANE Power Cord®	31026140
Luxshare 1.8M C13 Macao Power cord	31049524
LW 1.8m JAPAN Power Cord®	31039730
Volex 1.8M C13Japan Power cord	31049514
Luxshare 1.8M C13 Japan Power cord	31049523
Grandsun Black single head 1.8mCCC Power cord (R)	31028776
LX(ASAP) 1.8M CCC C13 power cord®	31040179
LW BLK1.8m BS Power Cord®	31026096
VL BLK1.8m BS Power Cord(R)	31026082
LW BLK1.8m VDE Power Cord®	31026355
VL BLK1.8m VDE Power Cord®	31026144
Luxshare 1.8M C13 Europe Power cord	31049522
Longwell Black single head 1.8m India Power cord ®	31033216
LW BLK1.8m BSMI Power Cord®	31026349
VL BLK1.8m BSMI Power Cord®	31026146
LW BLK1.8m SABS Power Cord®	31031394
Volex 1.8M C13 South Africa Power cord	31049509
Longwell Black single head 1.8m C13 IRAM Power cord ®	31036980
Volex 1.8M C13 LA Power cord	31049515
Longwell Black single head 1.8m C13 Brazil Power cord ®	31038784
Volex 1.8M C13 Brazil Power cord	31049513
Longwell Black single head 1.8m C13 Korea Power cord ®	31026351
VL BLK1.8m KTL Power Cord®	31026143
Longwell1.8M Italy C13 power cord®	31039726
Volex 1.8M C13 Italy Power cord	31049512
Longwell1.8M Denmark C13 power cord®	31039729
Volex 1.8M C13 Denmark Power cord	31049511
Longwell1.8M SEV C13 power cord®	31039732
Volex 1.8M C13 Switzerland Power cord	31049516

| Longwell1.8M Israel C13 power cord® | 31039728 | |
| Volex 1.8M C13 Israel Power cord | 31049510 | |

Chapter 11. FRU lists-H50–50

This chapter lists the information on the field replaceable units (FRUs).

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Notes: FRUs that have a 1 or 2 in the CRU column are Customer Replaceable Units (CRUs).

- **1**– identifies parts that are fairly simple to replace, requiring few or no tools.
- **2**– identifies parts that are slightly more difficult to replace.
- **N**-identifies parts that are not to be replaced by the customer.

Item #	Description	Lenovo PN	CRU ID
	CPU		
	I I7-4790 3.6/1600/4C/8M/1150 84W CPU	1101104	N
	I I7-4770 3.4/1600/8/1150 84 CPU	1100783	
	I I5-4460 3.2/1600/4C/6M/1150 84W CPU	1101107	
	I I5-4440 3.1/1600/4C/6M/1150 84 CPU	1100949	
	I I3-4150 3.5/1600/2C/3M/1150 54W CPU	1101088	
	I I3-4160 3.6/2C/3M/1600 1150 54W CPU	SSA0F66603	
	I I3-4130 3.4/1600/2C/3M/1150 54 CPU	1100930	
	I G3250 3.2/2C/3M/1333 1150 53W CPU	SSA0F66605	
	I G3240 3.1/1333/2C/3M/1150 54W CPU	1101089	
	I G3220 3.0/1333/2C/3M/1150 54 CPU	1100932	
	I G1840 2.8/1333/2C/2M/1150 54W CPU	1101095	
	I G1820 2.7/1333/2C/2M/1150 54 CPU	1101029	
	MB		N
	NOK B H81 95W refresh MB	5B20G05109	
	W8S B H81 95W refresh MB	5B20G05105	
	W8P B H81 95W refresh MB	5B20G05104	
	NOK E H81 95W refresh MB	5B20G05101	
	W8S E H81 95W refresh MB	5B20G05102	
	W8P E H81 95W refresh MB	5B20G05108	
	NOK E H81 MATX MB	90002567	
	W8S E H81 MATX MB	90002568	
	W8P E H81 MATX MB	90002569	

			N
Thermal			N
Intel 95W 4Pin Cooler Kit,No Fan Grill	SG10F47256		
TSL CEL3102836A6 Intel 65/95W Cooler	31045550		
AVC Z8UL06S012 Intel 65/95W Cooler	31045549		
DWPH D103-0265-A0 Intel 95W CPU Cooler	31506282		
LX 460mm cable 6PIN®	31034561		
GS 460mm sensor cable w_6pin®	31045784		
FOX PV902512PSPF 0JG2 9225 Sysfan(R)	31039640		
AVC DS09225R12HP183 9225 Sysfan(R)	31039310		
Memory			2
M378B5773QB0-CK0 2GB D3 -1600 Memory-HF	1-100908		
HMT425U6AFR6C-PB 2GB D3 -1600 Memory-HF	1-100653		
MT4JTF25664AZ-1G6E1 2GB D3-1600 Memory	1-100954		
Mic_R D9PSH 2GB D3L-1600 Memory-HF	1-100966		
Mic_S D9PXV 2GB D3-1600 Memory	1-100792		
M378B5173DB0-CK0 4GB D3 -1600 Memory-HF	1-100944		
HMT451U6BFR8C-PB 4GB D3-1600 Memory-HF	1-100988		
MT8JTF51264AZ-1G6E1 4GB D3-1600 Memory	1-100955		
Mic_R D9QBJ 4GB D3L-1600 M2 Memory	1-100807		
Mic_S D9QBJ 4GB D3-1600 M2 Memory	1-100682		
M378B1G73DB0-CK0 8GB D3 -1600 Memory-HF	1-100945		
HMT41GU6BFR8C-PB 8GB D3-1600 Memory-HF	1-100989		
MT16JTF1G64AZ-1G6E1 8GB D3-1600 Memory	1-100669		
Mic_R D9QBJ 8GB D3L-1600 Memory-HF	1-101011		
M378B5773QB0-CK0 2GB D3 -1600 Memory-HF	1100908		
M378B5173QH0-CK0 4GB D3 -1600 Memory-HF	1100909		
Mic_R D9PSH 2GB D3L-1600 Memory-HF	1100966		
Mic_R D9QBJ 4GB D3L-1600 M2 Memory	1100807		
HMT425U6AFR6C-PB 2GB D3 -1600 Memory-HF	1100653		
HMT451U6BFR8C-PB 4GB D3-1600 Memory-HF	1100988		
M378B5173DB0-CK0 4GB D3 -1600 Memory-HF	1-100944		
M378B1G73DB0-CK0 8GB D3 -1600 Memory-HF	1-100945		
HMT451U6BFR8C-PB 4GB D3-1600 Memory-HF	1-100988		
HMT41GU6BFR8C-PB 8GB D3-1600 Memory-HF	1-100989		
Mic_R D9QBJ 4GB D3L-1600 M2 Memory	1-100807		
Mic_R D9QBJ 8GB D3L-1600 Memory-HF	1-101011		

	HDD		2
	WDXL500A WD5000AAKX-08U6A0 500G HDD-LH	16200544	
	TSB Mars 4K 500G DT01ACA050 -LH	16200512	
	SGT Pharaoh 4K ST500DM002 500G HDD-LH	16200178	
	3.5inch SATA6G 7.2K Grenada BP 1.5 1TB	16200528	
	TSB Mars 4K 1TB DT01ACA100 -LH	16200513	
	WD XL1000B WD10EZEX-08M2NA0 1TB HDD	16200613	
	3.5inch SATA6G 7.2K Grenada BP 1.5 2TB	16200529	
	TSB Mars 4K 2TB DT01ACA200 -LH	16200514	
	ODD		2
	PSN SW430 HH SATA DVDROM-LH	25214498	
	TSST 16XSH-116BB SATA Black DVDROM-LH	25213719	
	TSST SH-116CB SATA DVD-ROM-LH	25216227	
	HLDS DH60N HH SATA DVD-ROM-LH	25216229	
	HLDS DH50N HH SATA DVD-ROM-LH	25210649	
	PLDS 16XDH-16D7SH HH SATA DVDROM-LH	25205800	
	PLDS 16XDH-16AESH SATA Black DVDRW-LH(LSOPU)	25213061	
	TSST SH-216DB HH SATA Rambo ODD-LH	25213720	
	Panasonic 16XSW830 HH SATA DVDRW-LH	25213885	
	HLDS GHB0N HH SATA Rambo-LH	25214470	
	Graphics		2
	MSI@Geforce GTX 745@2G/A/DB/H Graphics	11202802	
	BITLAND@Geforce GT 705@1G/A/DB/H Graphics	11-202742	
	MSI@Geforce GT 705@1G/A/DB/H Graphics	11-202743	
	VIDEO_CARD B@Geforce GT 705@2G/A/DB/H	SV10G56197	
	VIDEO_CARD M@Geforce GT 705@2G/A/DB/H - Optional	SV10G56198	
	VIDEO_CARD B@Geforce GT 705@1G/A/DB/H	SV10G52014	
	VIDEO_CARD M@Geforce GT 705@1G/A/DB/H	SV10G52015	
	MSI@Geforce GT 720@2G/A/DB/H Graphics	11-202746	
	BITLAND@R5 235@2G/A/DB/H Graphics	11-202748	
	Bitland@R5 235@1G/A/DB/H Graphics	11202403	
	MSI@R5 235@1G/A/DB/H Graphics	11202404	
	Bitland@R7 240@2G/A/DB/H Graphics	11202407	

			N
Power Supply			
Acbel PCB037EL0G PS3 LC 180W Single PSU	36200430		
Huntkey HK28023FP LC PS3 180W PSU	36200218		
Huntkey HK28025FP PS3 WW180W Single PSU	36200366		
Acbel PCB038EL0G PS3 WW180W single PSU	36200367		
PS-3181-03VA single 180w ES WW Liteon	SP50A36142		
K280-22PP single 180w ES WW Huntkey	SP50A36143		
FSP FSP28040PA ATX SINGLE 280W PSU	36200510		
HK HK38016FP ATX SINGLE 280W PSU	36200511		
LITEON PS428102VA SINGLE ES 280W PSU	36200507		
FSP FSP28040EPA SINGLE 280W ES PSU	36200508		
ACBEL PCB005EL0G SINGLE 280W ES PSU	36200509		
Wifi Card & Screw & Antenna cable			N
Cbt RTL8723BE 1x1BGN+BT HMC WLAN	20200440		
Liteon WB335 1x1BGN+BT4.0 HMC WLAN	20200437		
JT M2X3 antiskid Screw	31501076		
JT Wi-Fi cover	31501130		
LS X315 Front Antenna 780mm	31507039		
LS X315 Rear Antenna 500mm	31507040		
Card Reader			N
Bitland RTS5179 7in1 L_Single_CR	11201223		
Taisol GL827S 7in1 L_Single_CR	11201222		
Chassis			N
MACE LX-321HT chassis	30500525		
MACE LX-321HT Chassis	5C80G59894		
MACE LX-321HT Chassis F/Bezel	5CB0G59893		
MACE LX-321HT USB&CR Bracket	5B40G59900		
JT 328BT-23L Wlan Antenna Cover	5CB0G59219		
JT H81MB rearIO shielding	31504156		
LS 600mm 321HT&326CT LED cable	31507411		
JT 600mm 321HT&326CT LED cable	31507412		
MGE 600mm 321HT&326CT LED cable	31507413		
JT LX-321HT2 chassis	30500526		
JT LX-321HT2 Chassis	5C80G59901		
JT LX-321HT2 Chassis F/Bezel	5CB0G59902		
JT LX-321HT2 USB&CR Bracket	5B40G59891		
JT 328BT-23L Wlan Antenna Cover	5CB0G59219		
JT H81MB rearIO shielding	31504156		
LS 600mm 321HT&326CT LED cable	31507411		
JT 600mm 321HT&326CT LED cable	31507412		

	MGE 600mm 321HT&326CT LED cable	31507413	
	Cable		N
	LS SATA power cable(220_250_180)	31504572	
	GS SATA power cable(220_250_180)	31504573	
	Luxshare, 250mm SATA cable,2 latching	31043145	
	Grandsun, 250mm SATA cable,2 latching	31043146	
	Luxshare, 420mm SATA cable,2 latching, right angle	31024760	
	MGE 2H420mmSATA calbe Latch(R)	31506479	
	CL 2H420mmSATA calbe Latch(R)	31506478	
	LS USB2.0 F_IO cable_U500A600_321HT	31507416	
	CL USB2.0 F_IO cable_U500A600_321HT	31507417	
	JT VGA Rubber cover	31049015	
	MACE VGA Rubber cover - Optional	31505052	
	JT HDMI Rubber cover	31049017	
	Touch Pad		N
	Chicony TGR1226 2.4G touchpad BLK final	25212969	
	Speaker		1
	Lenovo Speaker M0620 (Black)	25013742	
	KB&Mouse		1
	Sunrex EKB-10YA(US) B-Silk USB KB-LVT8	25209111	
	Primax KB4721(US) B-Silk USB KB-LVT8	25209112	
	Sunrex EKB-10YA(TW) B-Silk USB KB-LVT8	25209114	
	Sunrex EKB-10YA(TH) B-Silk USB KB-LVT8	25209115	
	Sunrex EKB-10YA(CZ-SL) B-S USB KB-LVT8	25209116	
	Sunrex EKB-10YA(IN) B-Silk USB KB-LVT8	25209117	
	Sunrex EKB-10YA(RU) B-Silk USB KB-LVT8	25209118	
	Sunrex EKB-10YA(UK) B-Silk USB KB-LVT8	25209119	
	Sunrex EKB-10YA(Nordic) B-S USB KB-LVT8	25209120	
	Sunrex EKB-10YA(LA) B-Silk USB KB-LVT8	25209121	
	Sunrex EKB-10YA(AR) B-Silk USB KB-LVT8	25209122	
	Sunrex EKB-10YA(SW) B-Silk USB KB-LVT8	25209123	
	Sunrex EKB-10YA(GE) B-Silk USB KB-LVT8	25209124	
	Sunrex EKB-10YA(TR) B-Silk USB KB-LVT8	25209125	
	Sunrex EKB-10YA(SP) B-Silk USB KB-LVT8	25209126	
	Sunrex EKB-10YA(SL) B-Silk USB KB-LVT8	25209127	
	Sunrex EKB-10YA(IT) B-Silk USB KB-LVT8	25209128	
	Sunrex EKB-10YA(HB) B-Silk USB KB-LVT8	25209129	
	Sunrex EKB-10YA(FR) B-Silk USB KB-LVT8	25209130	
	Sunrex EKB-10YA(GK) B-Silk USB KB-LVT8	25209131	
	Sunrex EKB-10YA(HG) B-Silk USB KB-LVT8	25209132	

Sunrex EKB-10YA(BG) B-Silk USB KB-LVT8	25209133
Sunrex EKB-10YA(HR) B-Silk USB KB-LVT8	25209134
Sunrex EKB-10YA(JP) B-Silk USB KB-LVT8	25209135
Sunrex EKB-10YA(EN-FR) B-S USB KB-LVT8	25209136
Sunrex EKB-10YA(PT) B-Silk USB KB-LVT8	25209137
Sunrex EKB-10YA(BE-EN) B-S USB KB-LVT8	25209138
Sunrex EKB-10YA(DU) B-S USB KB-LVT8	25209139
Sunrex EKB-10YA(US) B-Silk USB KB-OKE8	25209140
Primax KB4721(US) B-Silk USB KB-OKE8	25209141
Chicony KU-1153 B-Silk USB KB-OKE8	25209142
Sunrex EKB-10YA(US) B-S USB KB-LVT8 LH	25209143
Sunrex EKB-10YA(US) B-S USB KB-OKE8 LH	25209144
Liteon LXH-SM-8825 B-Silk Mouse	25200528
Sunrex LXH-EMS-10ZA B-Silk Mouse	25200530
Primax M300 USB gesture mouse BLK	25213876
Primax M300 USB gesture mouse BLK-Israel	25214502
Liteon SK-8861(US) 2.4G KB-Black8	25209175
Liteon SK-8861(US-MY) 2.4G KB-Black8	25209176
Liteon SK-8861(TW) 2.4G KB-Black8	25209177
Liteon SK-8861(TH) 2.4G KB-Black8	25209178
Liteon SK-8861(CS-SK) 2.4G KB-Black8	25209179
Liteon SK-8861(US-IN) 2.4G KB-Black8	25209180
Liteon SK-8861(RU) 2.4G KB-Black8	25209181
Liteon SK-8861(GB) 2.4G KB-Black8	25209182
Liteon SK-8861(Nordic) 2.4G KB-Black8	25209183
Liteon SK-8861(LA) 2.4G KB-Black8	25209184
Liteon SK-8861(LA-AR) 2.4G KB-Black8	25209185
Liteon SK-8861(SA) 2.4G KB-Black8	25209186
Liteon SK-8861(CH) 2.4G KB-Black8	25209187
Liteon SK-8861(DE) 2.4G KB-Black8	25209188
Liteon SK-8861(TR) 2.4G KB-Black8	25209189
Liteon SK-8861(ES) 2.4G KB-Black8	25209190
Liteon SK-8861(SL) 2.4G KB-Black8	25209191
Liteon SK-8861(IT) 2.4G KB-Black8	25209192
Liteon SK-8861(IL) 2.4G KB-Black8	25209193
Liteon SK-8861(FR) 2.4G KB-Black8	25209194
Liteon SK-8861(GR) 2.4G KB-Black8	25209195
Liteon SK-8861(HU) 2.4G KB-Black8	25209196
Liteon SK-8861(BG) 2.4G KB-Black8	25209197
Liteon SK-8861(KR) 2.4G KB-Black8	25209198

Liteon SK-8861(JP) 2.4G KB-Black8	25209199	
Liteon SK-8861(EN-FR) 2.4G KB-Black8	25209200	
Liteon SK-8861(PT) 2.4G KB-Black8	25209201	
Liteon SK-8861(BE-EN) 2.4G KB-Black8	25209202	
Liteon SK-8861(DU) 2.4G KB-Black8	25209203	
Liteon SM-8861(WW) Mouse Black	25203464	
Liteon SM-8861 Mouse(No Battery) Black	25203465	
Liteon SM-8861 Mouse(MY) Black	25203466	
Liteon SM-8861(JP)Mouse-Black	25-205773	
Power Cord		1
LW BLK1.8M UL CSA Power Cord(R)	31026357	
GS BLK1.8M UL power cord®	31033217	
VL BLK1.8M UL CSA Power Cord®	31026145	
Luxshare 1.8M C13 US Power cord	31049521	
LW BLK1.8M UL CSA Power Cord(R)	31026357	
GS BLK1.8M UL power cord®	31033217	
VL BLK1.8M UL CSA Power Cord®	31026145	
Luxshare 1.8M C13 US Power cord	31049521	
Grandsun Black single head 1.8MCCC Power cord(R)	31028776	
LX(ASAP) 1.8M CCC C13 power cord®	31040179	
LW BLK1.8M BS Power Cord®	31026096	
Luxshare 1.8M C13 UK Power cord	31502861	
VL BLK1.8M BS Power Cord(R)	31026082	
LW BLK1.8M BS Power Cord®	31026096	
Luxshare 1.8M C13 UK Power cord	31502861	
VL BLK1.8M BS Power Cord(R)	31026082	
LW BLK1.8M ANE Power Cord®	31026350	
VL BLK1.8M ANE Power Cord®	31026140	
Luxshare 1.8M C13 Macao Power cord	31049524	
LW BLK1.8M VDE Power Cord®	31026355	
VL BLK1.8M VDE Power Cord®	31026144	
Luxshare 1.8M C13 Europe Power cord	31049522	
LW BLK1.8M VDE Power Cord®	31026355	
VL BLK1.8M VDE Power Cord®	31026144	
Luxshare 1.8M C13 Europe Power cord	31049522	
Luxshare 1.8M C13 India Power cord	31502871	
Longwell Black single head 1.8MIndia Power cord®	31033216	
LW BLK1.8M BSMI Power Cord®	31026349	
VL BLK1.8M BSMI Power Cord®	31026146	
LW BLK1.8M SABS Power Cord®	31031394	

Luxshare 1.8M C13 South Africa Power cord	31502865
Volex 1.8M C13 South Africa Power cord	31049509
Longwell Black single head 1.8M C13 IRAM Power cord®	31036980
Luxshare 1.8M C13 Latin America Power cord	31502869
Volex 1.8M C13 Latin America Power cord	31049515
Longwell Black single head 1.8M C13 IRAM Power cord®	31036980
Luxshare 1.8M C13 Latin America Power cord	31502869
Volex 1.8M C13 Latin America Power cord	31049515
Longwell Black single head 1.8M C13 Brazil Power cord®	31038784
Luxshare 1.8M C13 Brazil Power cord	31502862
Volex 1.8M C13 Brazil Power cord	31049513
Longwell Black single head 1.8M C13 Korea Power cord®	31026351
Luxshare 1.8M C13 Korea Power cord	31502870
VL BLK1.8M KTL Power Cord®	31026143
LW 1.8M JAPAN Power Cord®	31039730
Volex 1.8M C13 Japan Power cord	31049514
Luxshare 1.8M C13 Japan Power cord	31049523
LW 1.8M JAPAN Power Cord®	31039730
Volex 1.8M C13 Japan Power cord	31049514
Luxshare 1.8M C13 Japan Power cord	31049523
Longwell 1.8M Italy C13 power cord®	31039726
Luxshare 1.8M C13 Italy Power cord	31502864
Volex 1.8M C13 Italy Power cord	31049512
Longwell 1.8M Denmark C13 power cord®	31039729
Luxshare 1.8M C13 Denmark Power cord	31502863
Volex 1.8M C13 Denmark Power cord	31049511
Longwell 1.8M SEV C13 power cord®	31039732
Luxshare 1.8M C13 Switzerland Power cord	31502868
Volex 1.8M C13 Switzerland Power cord	31049516
Longwell 1.8M Israel C13 power cord®	31039728
Luxshare 1.8M C13 Israel Power cord	31502866
Volex 1.8M C13 Israel Power cord	31049510

Chapter 12. FRU lists-H50–55

This chapter lists the information on the field replaceable units (FRUs).

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Notes: FRUs that have a 1 or 2 in the CRU column are Customer Replaceable Units (CRUs).

- **1**– identifies parts that are fairly simple to replace, requiring few or no tools.
- **2**– identifies parts that are slightly more difficult to replace.
- **N**-identifies parts that are not to be replaced by the customer.

Item #	Description	Lenovo PN	CRU ID
	Processor		
	A10-7800, Radeon™ R7 SeriesAMD A10-7800 3.5/4M/4C/2133/FM2+ 65 CPU	1101099	2
	A8-7600, Radeon™ R5 SeriesAMD A8-7600 3.3/4M/4C/2133/FM2+ 65 CPU	1101101	
	A6-7400K, Radeon™ R3 SeriesAMD A6-7400K 3.7/2M/2C/1866/FM2+ 65 CPU	1101102	
	A4-7300, Radeon™ R3 SeriesAMD A4-7300 3.4/2M/2C/1866/FM2+ 65 CPU	1101103	
	A10-6700, HD8670D	1100819	
	A8-6500, HD8570D	1100821	
	A6-6400K, HD8470D	1100822	
	A4-6300, HD8370D	1100823	
	AMD Athlon™ X4 750	1101047	
	AMD Athlon™ X2 350	1101048	
	AMD Sempron™ X2 250	1101049	
	Motherboard		N
	NOK F A78 MB	90006402	
	W8S F A78 MB	90006403	
	W8P F A78 MB	90006404	
	Thermal module		2
	TS CEK8702836F6 89W/4P COOLER(R)	31039386	
	AVC Z7UH00C016 4P/89W COOLER(R)	31039315	
	FOX PV902512PSPF 0J-G-2 9225 Sysfan(R)	31039640	
	AVC DS09225R12HP183 9225 Sysfan(R)	31039310	
	LX 460 mm feeling Wen Xian's 6 pins®	31034561	
	GS 460mm sensor cable w_6pin®	31045784	

			2
	Memory		
	M378B5773QB0-CK0 2GB D3 -1600 Memory-HF	1100908	
	HMT425U6AFR6C-PB 2GB D3-1600 Memory	1100653	
	Mic_R D9PSH 2GB D3L-1600 Memory-HF	1100966	
	Mic_R D9PSH 2GB D3L-1600 M1 Memory-HF	1101063	
	Mic_S D9PXV 2GB D3-1600 Memory	1100792	
	MT4JTF25664AZ-1G6E1 2GB D3-1600 Memory	1100954	
	M378B5173DB0-CK0 4GB D3 -1600 Memory-HF	1100944	
	HMT451U6BFR8C-PB 4GB D3-1600 Memory-HF	1100988	
	MT8JTF51264AZ-1G6E1 4GB D3-1600 Memory	1100955	
	Mic_R D9QBJ 4GB D3L-1600 M2 Memory	1100807	
	Mic_S D9QBJ 4GB D3-1600 M2 Memory	1100682	
	M378B5773QB0-CK0 2GB D3 -1600 Memory-HF	1100908	
	M378B5173DB0-CK0 4GB D3 -1600 Memory-HF	1100944	
	HMT425U6AFR6C-PB 2GB D3 -1600 Memory-HF	1100653	
	HMT451U6BFR8C-PB 4GB D3-1600 Memory-HF	1100988	
	Mic_R D9PSH 2GB D3L-1600 Memory-HF	1100966	
	Mic_R D9QBJ 4GB D3L-1600 M2 Memory	1100807	
	M378B5173DB0-CK0 4GB D3 -1600 Memory-HF	1100944	
	M378B1G73DB0-CK0 8GB D3 -1600 Memory-HF	1100945	
	HMT451U6BFR8C-PB 4GB D3-1600 Memory-HF	1100988	
	HMT41GU6BFR8C-PB 8GB D3-1600 Memory-HF	1100989	
	Mic_R D9QBJ 4GB D3L-1600 M2 Memory	1100807	
	Mic_R D9QBJ 8GB D3L-1600 Memory-HF	1101011	
	M378B1G73DB0-CK0 8GB D3 -1600 Memory-HF	1100945	
	HMT41GU6BFR8C-PB 8GB D3-1600 Memory-HF	1100989	
	MT16JTF1G64AZ-1G6E1 8GB D3-1600 Memory	1100669	
	Mic_R D9QBJ 8GB D3L-1600 Memory-HF	1101011	
	HDD		2
	WDXL500A WD5000AAKX-08U6A0 500G HDD-LH	16200544	
	TSB Mars 4K 500G DT01ACA050 -LH	16200512	
	SGT Pharaoh 4K ST500DM002 500G HDD-LH	16200178	
	3.5inch SATA6G 7.2K Grenada BP 1.5 1TB	16200528	
	TSB Mars 4K 1TB DT01ACA100 -LH	16200513	
	WD10EZEX-08M2NA0	16200613	
	3.5inch SATA6G 7.2K Grenada BP 1.5 2TB	16200529	
	TSB Mars 4K 2TB DT01ACA200 -LH	16200514	

ODD			2
PSN SW430 HH SATA DVDROM-LH	25214498		
TSST 16XSH-116BB SATA Black DVDROM-LH	25213719		
HLDS DH50N HH SATA DVD-ROM-LH	25210649		
PLDS 16XDH-16D7SH HH SATA DVDROM-LH	25205800		
PLDS 16XDH-16AESH SATA Black DVDRW-LH(LSOPU)	25213061		
TSST SH-216DB HH SATA Rambo ODD-LH	25213720		
Panasonic 16XSW830 HH SATA DVDRW-LH	25213885		
HLDS GHB0N HH SATA Rambo-LH	25214470		
HLDS BH40N Blu-ray Recorder-LH(BE)	25210651		
Cable			N
LX SATA power cable(300mm_300mm)	31502005		
GX SATA power cable(300mm_300mm)	31502006		
LS SATA power cable(220_250_180)	31504572		
GS SATA power cable(220_250_180)	31504573		
Luxshare, 250mm SATA cable,2 latching	31043145		
Grandsun, 250mm SATA cable,2 latching	31043146		
GS 2H300mmSATA calbe Latch®	31024767		
LX 2H300mmSATA calbe Latch®	31024785		
CL 2H420mmSATA calbe Latch(R)	31506478		
LX 2H420mmSATA calbe Latch(R)	31024760		
MGE 2H420mmSATA calbe Latch(R)	31506479		
JT VGA plastic cover	31049015		
MACE VGA rubber cover	31505052		
JT HDMI rubber cover	31049017		
Graphics			2
Bitland@R5 235@1G/A/DB/H Graphics	11202403		
MSI@R5 235@1G/A/DB/H Graphics	11202404		
BITLAND@R5 235@2G/A/DB/H Graphics	11202748		
Bitland@R7 240@2G/A/DB/H Graphics	11202407		
MSI@Geforce GT 720@2G/A/DB/H Graphics	11202746		
VIDEO_CARD B@Geforce GT 705@2G/A/DB/H	SV10G56197		
VIDEO_CARD M@Geforce GT 705@2G/A/DB/H	SV10G56198		
VIDEO_CARD B@Geforce GT 705@1G/A/DB/H	SV10G52014		
VIDEO_CARD M@Geforce GT 705@1G/A/DB/H	SV10G52015		
BITLAND@Geforce GT 705@1G/A/DB/H Graphics	11202742		
MSI@Geforce GT 705@1G/A/DB/H Graphics	11202743		

Power Supply		N
Acbel PCB037-EL0G PS3 LC 180W Single PSU	36200430	
Huntkey HK280-23FP LC PS3 180W PSU	36200218	
HUNTKEY HK280-25FP 180W WW SINGLE PSU	36200366	
ACBEL PCB038-EL0G 180W WW SINGLE PSU	36200367	
PS-3181-03VA single 180w ES WW	SP50A36142	
HK280-22PP single 180w ES WW - Optional	SP50A36143	
FSP FSP280-40PA ATX SINGLE 280W PSU	36200510	
HK HK380-16FP ATX SINGLE 280W PSU	36200511	
LITEON PS-4281-02VA SINGLE ES 280W PSU	36200507	
FSP FSP280-40EPA SINGLE 280W ES PSU	36200508	
ACBEL PCB005-EL0G SINGLE 280W ES PSU	36200509	
Front IO		N
LS USB2.0 F_IO cable_U500A600_321HT	31507416	
CL USB2.0 F_IO cable_U500A600_321HT	31507417	
Bitland RTS5179 7in1 L_Single_CR	11201223	
Taisol GL827S 7in1 L_Single_CR	11201222	
Mechanical		N
MACE LX-321HT chassis	30500525	
MACE LX-321HT Chassis	5C80G59894	
MACE LX-321HT Chassis F/Bezel	5CB0G59893	
MACE LX-321HT USB&CR Bracket	5B40G59900	
JT 328BT-23L Wlan Antenna Cover	5CB0G59219	
JT H81MB rearIO shielding	31504156	
LS 600mm 321HT&326CT LED cable	31507411	
JT 600mm 321HT&326CT LED cable	31507412	
MGE 600mm 321HT&326CT LED cable	31507413	
JT LX-321HT2 chassis	30500526	
JT LX-321HT2 Chassis	5C80G59901	
JT LX-321HT2 Chassis F/Bezel	5CB0G59902	
JT LX-321HT2 USB&CR Bracket	5B40G59891	
JT 328BT-23L Wlan Antenna Cover	5CB0G59219	
JT H81MB rearIO shielding	31504156	
LS 600mm 321HT&326CT LED cable	31507411	
JT 600mm 321HT&326CT LED cable	31507412	
MGE 600mm 321HT&326CT LED cable	31507413	

	min-PCIE Card		N
	LS X315 Front Antenna	31507039	
	LS X315 Rear Antenna	31507040	
	JT Wi-Fi cover	31501130	
	JT M2X3 antiskid Screw	31501076	
	Liteon WB335 1x1BGN+BT4.0 HMC WLAN	20200437	
	Ltn RTL8723BE 1x1BGN+BT HMC WLAN	20200440	
		31506091	
	Ltn RTL8723BE 1x1BGN+BT HMC WLAN	20200440	
	Liteon WB335 1x1BGN+BT4.0 HMC WLAN	20200437	
	Touchpad		N
	Chicony TGR1226 2.4G touchpad BLK final	25212969	
	Speaker		1
	Lenovo Speaker M0620 (Black)	25013742	
	KB/MOUSE		1
	Sunrex EKB-10YA(US) B-Silk USB KB-LVT8	25209111	
	Primax KB4721(US) B-Silk USB KB-LVT8	25209112	
	Chicony KU-1153(US) B-Silk USB KB-LVT8	25209113	
	Sunrex EKB-10YA(TW) B-Silk USB KB-LVT8	25209114	
	Sunrex EKB-10YA(TH) B-Silk USB KB-LVT8	25209115	
	Sunrex EKB-10YA(CZ-SL) B-S USB KB-LVT8	25209116	
	Sunrex EKB-10YA(IN) B-Silk USB KB-LVT8	25209117	
	Sunrex EKB-10YA(RU) B-Silk USB KB-LVT8	25209118	
	Sunrex EKB-10YA(UK) B-Silk USB KB-LVT8	25209119	
	Sunrex EKB-10YA(Nordic) B-S USB KB-LVT8	25209120	
	Sunrex EKB-10YA(LA) B-Silk USB KB-LVT8	25209121	
	Sunrex EKB-10YA(AR) B-Silk USB KB-LVT8	25209122	
	Sunrex EKB-10YA(SW) B-Silk USB KB-LVT8	25209123	
	Sunrex EKB-10YA(GE) B-Silk USB KB-LVT8	25209124	
	Sunrex EKB-10YA(TR) B-Silk USB KB-LVT8	25209125	
	Sunrex EKB-10YA(SP) B-Silk USB KB-LVT8	25209126	
	Sunrex EKB-10YA(SL) B-Silk USB KB-LVT8	25209127	
	Sunrex EKB-10YA(IT) B-Silk USB KB-LVT8	25209128	
	Sunrex EKB-10YA(HB) B-Silk USB KB-LVT8	25209129	
	Sunrex EKB-10YA(FR) B-Silk USB KB-LVT8	25209130	
	Sunrex EKB-10YA(GK) B-Silk USB KB-LVT8	25209131	
	Sunrex EKB-10YA(HG) B-Silk USB KB-LVT8	25209132	
	Sunrex EKB-10YA(BG) B-Silk USB KB-LVT8	25209133	
	Sunrex EKB-10YA(HR) B-Silk USB KB-LVT8	25209134	
	Sunrex EKB-10YA(JP) B-Silk USB KB-LVT8	25209135	

Sunrex EKB-10YA(EN-FR) B-S USB KB-LVT8	25209136	
Sunrex EKB-10YA(PT) B-Silk USB KB-LVT8	25209137	
Sunrex EKB-10YA(BE-EN) B-S USB KB-LVT8	25209138	
Sunrex EKB-10YA(DU) B-S USB KB-LVT8	25209139	
Liteon LXH-SM-8825 B-Silk Mouse	25200528	
Sunrex LXH-EMS-10ZA B-Silk Mouse	25200530	
Primax M300 USB gesture mouse BLK	25213876	
Liteon SK-8861(US) 2.4G KB-Black8	25209175	
Liteon SK-8861(US-MY) 2.4G KB-Black8	25209176	
Liteon SK-8861(TW) 2.4G KB-Black8	25209177	
Liteon SK-8861(TH) 2.4G KB-Black8	25209178	
Liteon SK-8861(CS-SK) 2.4G KB-Black8	25209179	
Liteon SK-8861(US-IN) 2.4G KB-Black8	25209180	
Liteon SK-8861(RU) 2.4G KB-Black8	25209181	
Liteon SK-8861(GB) 2.4G KB-Black8	25209182	
Liteon SK-8861(Nordic) 2.4G KB-Black8	25209183	
Liteon SK-8861(LA) 2.4G KB-Black8	25209184	
Liteon SK-8861(LA-AR) 2.4G KB-Black8	25209185	
Liteon SK-8861(SA) 2.4G KB-Black8	25209186	
Liteon SK-8861(CH) 2.4G KB-Black8	25209187	
Liteon SK-8861(DE) 2.4G KB-Black8	25209188	
Liteon SK-8861(TR) 2.4G KB-Black8	25209189	
Liteon SK-8861(ES) 2.4G KB-Black8	25209190	
Liteon SK-8861(SL) 2.4G KB-Black8	25209191	
Liteon SK-8861(IT) 2.4G KB-Black8	25209192	
Liteon SK-8861(IL) 2.4G KB-Black8	25209193	
Liteon SK-8861(FR) 2.4G KB-Black8	25209194	
Liteon SK-8861(GR) 2.4G KB-Black8	25209195	
Liteon SK-8861(HU) 2.4G KB-Black8	25209196	
Liteon SK-8861(BG) 2.4G KB-Black8	25209197	
Liteon SK-8861(KR) 2.4G KB-Black8	25209198	
Liteon SK-8861(JP) 2.4G KB-Black8	25209199	
Liteon SK-8861(EN-FR) 2.4G KB-Black8	25209200	
Liteon SK-8861(PT) 2.4G KB-Black8	25209201	
Liteon SK-8861(BE-EN) 2.4G KB-Black8	25209202	
Liteon SK-8861(DU) 2.4G KB-Black8	25209203	

Power Cord		1
LW BLK1.8M UL CSA Power Cord(R)	31026357	
GS BLK1.8M UL power cord®	31033217	
VL BLK1.8M UL CSA Power Cord®	31026145	
LX(ASAP) 1.8M C13 UL power cord	31049521	
LW BLK1.8M UL CSA Power Cord(R)	31026357	
VL BLK1.8M UL CSA Power Cord®	31026145	
LX(ASAP) 1.8M C13 UL power cord	31049521	
GS BLK1T1 1.8M CCC Power cord®	31028776	
LX(ASAP) 1.8M CCC C13 power cord®	31040179	
LW BLK1.8M BS Power Cord®	31026096	
VL BLK1.8M BS Power Cord(R)	31026082	
LW BLK1.8M BS Power Cord®	31026096	
VL BLK1.8M BS Power Cord(R)	31026082	
LW BLK1.8M BS Power Cord®	31026096	
VL BLK1.8M BS Power Cord(R)	31026082	
LW BLK1.8M ANE Power Cord®	31026350	
VL BLK1.8M ANE Power Cord®	31026140	
LX(ASAP) 1.8M C13 ANZ power cord	31049524	
LW BLK1.8M VDE Power Cord®	31026355	
VL BLK1.8M VDE Power Cord®	31026144	
LX(ASAP) 1.8M C13 EU power cord	31049522	
LW BLK1.8M VDE Power Cord®	31026355	
VL BLK1.8M VDE Power Cord®	31026144	
LX(ASAP) 1.8M C13 EU power cord	31049522	
LW BLK1.8M VDE Power Cord®	31026355	
VL BLK1.8M VDE Power Cord®	31026144	
LX(ASAP) 1.8M C13 EU power cord	31049522	
LW BLK1.8M India power cord®	31033216	
LW BLK1.8M BSMI Power Cord®	31026349	
VL BLK1.8M BSMI Power Cord®	31026146	
LW BLK1.8M SABS Power Cord®	31031394	
Volex 1.8M C13 SA power cord	31049509	
LW BLK1.8M SABS Power Cord®	31031394	
Volex 1.8M C13 SA power cord	31049509	
Longwell Black single head 1.8M C13 IRAM Power cord®	31036980	
Volex 1.8M C13 LA power cord	31049515	
Longwell Black single head 1.8M C13 IRAM Power cord®	31036980	
Volex 1.8M C13 LA power cord	31049515	
Longwell Black single head 1.8M C13 Brazil Power cord®	31038784	

	Volex 1.8M C13 BR power cord	31049513	
	LW BLK1.8M KTL Power Cord®	31026351	
	VL BLK1.8M KTL Power Cord®	31026143	
	LW 1.8M JAPAN Power Cord®	31039730	
	Volex 1.8M C13 JPN power cord	31049514	
	LX(ASAP) 1.8M C13 JPN power cord	31049523	
	LW 1.8M JAPAN Power Cord®	31039730	
	Volex 1.8M C13 JPN power cord	31049514	
	LX(ASAP) 1.8M C13 JPN power cord	31049523	
	LW 1.8M Italy Power Cord®	31039726	
	Volex 1.8M C13 ITY power cord	31049512	
	LW 1.8M Italy Power Cord®	31039726	
	Volex 1.8M C13 ITY power cord	31049512	
	LW 1.8M Denmark Power Cord®	31039729	
	Volex 1.8M C13 DEN power cord	31049511	
	LW 1.8M Denmark Power Cord®	31039729	
	Volex 1.8M C13 DEN power cord	31049511	
	LW 1.8M Switzerland Power Cord®	31039732	
	Volex 1.8M C13 SWI power cord	31049516	
	LW 1.8M Switzerland Power Cord®	31039732	
	Volex 1.8M C13 SWI power cord	31049516	
	LW 1.8M Israel Power Cord®	31039728	
	Volex 1.8M C13 ISI power cord	31049510	
	LW 1.8M Israel Power Cord®	31039728	
	Volex 1.8M C13 ISI power cord	31049510	

Chapter 13. General information

This chapter provides general information that applies to all machine types supported by this publication.

Additional Service Information

This chapter provides additional information that the service representative might find helpful.

Power management

Power management reduces the power consumption of certain components of the computer such as the system power supply, processor, hard disk drives, and some monitors.

Advanced configuration and power interface (ACPI) BIOS

As this computer has an ACPI BIOS system, the operating system is allowed to control the power management features of the computer and the settings for Advanced Power Management (APM) BIOS mode is ignored. Not all operating systems support ACPI BIOS mode.

Automatic Power-On features

The Automatic Power-On features within the Power Management menu allow you to enable and disable features that turn on the computer automatically.

- Wake Up on Alarm: You can specify a date and time at which the computer will be turned on automatically. This can be either a single event , a daily event or a weekly event.
- Wake Up on LAN: This feature allows LAN adapter card to wake the System.